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ABSTRACT

Five papers on linguistics contained in this issue include the following: "Tones for Profoundly Deaf Tone-Language Speakers" (Teresa Y. C. Ching), a study using a simplified speech pattern approach to enhance perception of tonal contrasts in Cantonese; "Word Formation and the Limits of Analytic Equivalence" (Peter Crisp), a discussion of the relationship between complex words such as "man-eater and self-locking" and phrases such as "eats men and locks itself"; "Interlanguage Ergative Constructions and Learning" (Virginia Yip), which examines a class of interlanguage structures where passivization is commonly overextended to ergative verbs by Chinese learners of English; "Vowel Devoicing in Shanghai" (Eric Zee), a phonetic study of vowel devoicing in a tone language, a Chinese dialect; and "Some Notes on Dialect in Recent English Literature" (Mark Newbrook), which draws attention to the scope of dialectological investigation in literature more recent than that usually studied. (MSE)

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Articles

Teresa Y C Ching	Tones for profoundly deaf tone-language speakers
Peter Crisp	Word formation and the limits of analytic equivalence
Virginia Yip	Interlanguage ergative constructions and learning
Eric Zee	Vowel devoicing in Shanghai

Notes & Discussion

Mark Newbrook	Some notes on dialect in recent English Literature

Editorial note

The second issue of the CUHK Papers in Linguistics features two articles on applications of phonetics and linguistics to language learning, a discussion on the Chinese dialect as spoken in Shanghai, and one on word formation. There is also a short contribution from Mark Newbrook who has now left us.

While most contributors are from the English Department, it is indeed a pleasure to receive a manuscript from the Anthropology Department. We hope that future issues would provide a better representation of linguistic and language-related activities in CUHK, and that the Papers could promote a better sharing of ideas.

Finally, we wish to thank the Trustees of Lingnan University and the United Board of Higher Christian Education in Asia for funding this publication.

Please address enquiries to:

Linguistics Research Laboratory Committee
Department of English
Chinese University of Hong Kong
Shatin, N.T.
Hong Kong

Teresa Ching

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TONES FOR PROFOUNDLY DEAF TONE-LANGUAGE SPEAKERS *

Teresa Ching
CUHK

I Significance of tones

The use of tones to signal different meanings is an inherent characteristic of a tone language like Cantonese. Syllable-based tonal contrasts can be realized by one of six tonal contours, namely, the high level tone, the high rising tone, the mid level tone, the low falling tone, the low rising tone, and the low level tone. This may be illustrated by the segmental combination /ji/. The utterance means "clothing", "chair", "meaning", "child", "ears" or "two", according to which of the six tones the speaker has selected in his production of /ji/. This systematic use of pitch variations on the syllable level constitutes lexical tone contrasts. Tonal patterns can also be superimposed on an utterance for discoursal functions, such as interrogative as opposed to declarative; and for affective purposes, for instance, to express attitudes and emotions. This linguistic use of pitch on the sentence level is intonation, and is also characteristic of non-tone languages, such as English (see, for example, O'Connor and Arnold, 1965).

The production of tonal contrasts relates primarily to the speaker's control of the rate of vibration of his vocal folds in phonation. The hearer perceives changes in the fundamental frequency as differences in pitch. When speech communication takes place in a tone language environment, the ability to produce and perceive tonal contrasts is of utmost importance, for lexical distinctions and grammatical meanings are dependent on the systematic use of voice pitch. Figure 1 shows the contrastive tone patterns in Cantonese.

Figure 1 about here

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*To appear in the Proceedings of the 2nd Asian-Pacific Regional Conference on Deafness, Jakarta, 1989.

From a developmental perspective, vocalisation is one component of the auditory-vocal dimension of communication activity (see Bruner, 1975) which the infant uses to express its intentions at a very early stage in life. Learned patterns of prosodic behaviour and language specific prosody tend to emerge during the first year of life (Weir, 1962; Dore,1975; Crystal, 1975). Recent work on the acquisition of tone languages all agree that phonetic accuracy in the production of lexical tones is learned earlier than in the production of segments (Tuaycharoen, 1978; Tse, 1978; Clumeck, 1980). In normal language acquisition, the establishment of efficient phonatory control precedes accurate articulatory control. This normal sequence must be a sure guide for helping the profoundly deaf child to develop speech communicative ability. Not only is the establishment of phonatory skills of pragmatic and social importance, it also underlies subsequent verbal and cognitive development.

II Tones and the profoundly hearing-impaired

With an average hearing loss over the first four frequencies (250Hz, 500Hz, 1kHz and 2kHz) of greater than 100dB, the profoundly hearing-impaired listener often encounters great difficulty in understanding speech. This is especially so in a tone language situation, because tones cannot be lipread (Ching, 1986). In an experimental task in which the lipreadability of Cantonese connected speech is investigated, it was found that the performance, measured as number of words conveyed in a minute, is worse than that of the same task in English (Rosen, Fourcin and Moore, 1981). It is much more difficult to understand speech on the basis of lipreading alone in a tone language environment. The invisible voice pitch contrasts carry an important functional load in the language system, but lexical tones cannot be lipread in isolation or in context for meaning to be conveyed. When information related only to the voice pitch of the speaker is available auditorily, the enhancement of receptive ability in Cantonese is a 200% gain. Much of the lexical ambiguity is resolved, and the benefit is directly related to the provision of tonal information to complement lipread information. A gain of 76% was obtained for the same task in English. Since the larynx activity of the speaker cannot be seen on the face, while certain articulatory movements are visible, lipreading can best be complemented by the availability of clear information relating to the speaker's voice.

The complexity of the acoustic speech signal undermines the ability of the deaf listener to hear speech. While conventional hearing-aids tend to provide amplification across the speech spectrum, this does not always contribute to improving speech reception. It has

been reported that profoundly hearing-impaired listeners are best at discriminating frequency changes at low frequencies, particularly when these are presented as a pure tone rather than a complex tone (Stock and Rosen, 1986). The limited auditory functioning of the impaired ear is not well served by the conventional acoustic hearing-aids used. Lebisch (1989), for instance, commented on the mismatch between the recommendation of the audiologist who fits the hearing-aids and the preference of the experienced user. The latter consistently adjusts for a higher gain in the low frequency end, and a lesser gain above 1kHz than the settings suggested by the professional. As frequency selectivity worsens (widened critical bands) and frequency discriminability degrades at higher frequencies, what can be processed may be masked by other components in the amplified signal. Background noise would also exert influence on the entire auditory spectrum. Not only is the deaf listener unable to use the additional information in the speech signal, he is also deprived of what he can use.

Even in the case of profound impairment, there is usually some residual hearing abilities. For example, Rosen et al (1987) reported for their profoundly deaf listeners the ability to distinguish periodic from aperiodic sounds, and to discriminate changes in frequency in the low frequency range (below 500Hz). These capabilities are of practical importance in speech perception.

The range within which there is residual hearing corresponds to the larynx frequency range of the speaker. Figure 2 shows a typical left-hand corner audiogram of a profoundly deaf listener, and the corresponding larynx frequency range of two Cantonese speakers.

Figure 2 about here

Variations in tone and intonation are conveyed by systematic changes in the fundamental frequency patterns in the speaker's voice, and these occur below 500Hz in normal speech. If the varying voice pitch could be clearly conveyed to the profoundly deaf listener, he would be able to discriminate changes in frequency in this range and use the tonal information for understanding speech.

III Speech pattern approach to enhancing tonal perception

Tone patterns are most useful to the impaired listener who has to depend on lipreading for understanding speech. For these patterns to be presented in a way matched to the limited auditory abilities, simplification is necessary. Speech pattern features can be extracted from the complex speech signal and presented in a simplified form.

The extraction of tonal patterns from speech can be carried out by the use of a laryngograph, which senses vocal fold closure by two electrodes externally placed on the speaker's neck (Fourcin, 1974). Moore et al (1985) reported extensive work using the speech pattern extraction approach. Fourcin (1986a) described the possibility of presenting simplified tonal information by means of a specially designed hearing-aid. A profoundly deaf listener using the Sivo-aid, which provides him only with a sinusoidal representation of voice fundamental frequency variation, performs consistently better at lipreading connected speech than when he uses his own high quality acoustic hearing-aid, which provides him with the entire speech signal. Rosen et al (1987) also provided evidence showing that for some impaired listeners, simplifying the speech signal to a sinusoid is advantageous to speech reception.

The presentation of tonal and prosodic information in a simplified form can be implemented in the use of the Sivo-aid. The device basically receives a speech input, extracts the voice fundamental frequency from the signal, and generates an acoustic sinusoid at the appropriate frequency and amplitude level. The implementation is detailed in Rosen et al, 1987.

IV Video-recorded tests of tone perception

Since visual information is of crucial importance to speech perception, particularly for hearing-aid users, voice pitch information must be evaluated as an aid to lipreading. The relative usefulness of presenting a simplified speech pattern for enhancing speech perception is assessed using video-recorded lipreading tests. It is profitable to start with simple patterns of contrasts and to gradually build up in complexity on the basis of increasing speech processing abilities.

The present work aims at assessing the practical use of the simplified speech pattern approach by comparing the performance using an acoustic hearing-aid and the Sivo-aid in a tone labelling task. The initial assessment is complemented by a related programme of training to enhance perception of lexically contrastive

tones. Subsequent assessment provides an objective measure of progress.

1 Method

A battery of audio-video recorded test material in Cantonese has been developed to assess speech receptive ability. This includes a tonal component and a consonantal component.

Of primary concern here is the tests on tonal contrasts. These are graded, from two tone discrimination involving the High Level and the Low Falling; to three tone contrasts involving the High Level vs. High Rising vs. Low Falling; to the entire system of six tone contrast, namely High Level, High Rising, Mid Level, Low Falling, Low Rising, and Low Level tones. These tonal contrasts are all based on /ji/, which gives readily available lexical labels corresponding to the six tonal patterns (see Figure 1 for the larynx frequency patterns).

A female native speaker of Cantonese was recorded. Figure 3 shows the voice characteristics of the speaker.

Figure 3 about here

The frequency of vocal fold vibration was derived from a long term sample of the larynx waveform, determined on a period by period basis. The second order probability histogram shows the distribution of laryngeal periods at different frequencies. The modal frequency is 243Hz, with a wide range of vibratory activity in the dominant range of 170 - 329Hz. This range within which varied tonal and intonational patterns are realized can be illustrated in the digram distribution, derived by plotting successive periods against each other. (For a detailed explanation of this laryngograph-based micro-computer analysis of vocal fold function, see Fourcin, 1986b).

The recordings were made on a Sony U-matic high band video-cassette-recorder. Speech was recorded on one channel and simultaneously derived laryngograph signal on the other.

Each of the test items was embedded in a frame /¯ni-ko ˍhai _____ / (this is _____), the inter-stimuli interval was 7 seconds. Each test consisted of

ten tokens of each stimulus, making a total of twenty in the two-tone tests, and thirty in the three-tone tests. A practice session preceded each test session, giving the fundamental frequency patterns of the contrastive tones and the corresponding lexical items.

Response sheets were used, on which the subjects were required to circle the appropriate lexical item after each stimulus was presented.

2 Conditions

All conditions used visual stimuli, and four of them presented auditory signal either via sound field when the subjects used their own hearing-aids or through the Sivo-aid. The auditory signal can be one of two types, speech tones or larynx tones. A fifth condition was lipreading alone.

The tests aimed at assessing the relative contribution of the conventional hearing-aid and the Sivo-aid; and the use of speech tones and larynx tones for lexical tone reception. The Sivo-aid presents information related only to the voice fundamental frequency of the speaker, with practically no spectral information; while the conventional hearing-aid presents the complex speech signal. The speech tones contain vocal tract information, while the larynx tones contain basically tonal information.

Before the testing session, each subject adjusted for the most comfortable listening level for all conditions with auditory signal. The individual settings for each subject when listening to recorded speech and recorded larynx tones were also observed for optimal reception using the Sivo-aid.

3 Subjects

Four profoundly deaf children served as subjects (Figure 4 gives the pure tone audiograms of the children). After the initial assessment, the children were placed in weekly training sessions using the Sivo-aid and a visual display (a Visi-pitch display). The subjects were tested again after a four-week programme.

Figure 4 about here

A control group, which comprised all students in the same class as the subjects, was also tested. They all

used their own hearing-aids and lipread speech tones, larynx tones, and finally lipread with no auditory signal. All children were in the age range of 10-12 years.

All subjects were tested individually in a sound-treated room. The video signal was presented on a 12in. colour monitor and the audio signal via a loudspeaker for the sound field conditions. As for the Sivo-aid conditions, the audio signal was fed directly into the hearing-aid.

4 Results

The two-tone labelling tests were used. This involves labelling a stimulus as meaning either "clothing" (for the high level tone) or "child" (for the low falling tone). The orthographic representations of these lexical labels are well within the knowledge of even the youngest child tested.

Table 1 gives the labelling results of all children. Responses were generally random (50% or below), showing no discrimination between the two tones. Either the subjects did not understand the task completely, or they lack the ability to classify the simple stimuli accurately. It is apparent that tonal contrasts cannot be lipread, even in a closed class of two oppositions.

Table 1 about here

Four of the twenty-three children tested attained a criterion level of 75% correct in the two-tone tests when lipreading speech tones with their own hearing-aids. These are severely hearing-impaired children with an average hearing loss in the region 75 - 90dB over the first four frequencies. They are making better use of their residual hearing than their profoundly deaf peer group. They are also getting additional information from the speech tones than from the larynx tones.

Further assessment using a three-tone test and subsequent tests of the entire tonal system would reveal limitations in their linguistic capabilities, which could then be complemented by a rehabilitative programme to improve their prosodic skills. Normally hearing children performing the same task can confidently label the two tone contrasts accurately by five, and the three tone contrasts by six. Ching (1984) reported that children made confident judgments on the entire system of tonal

contrasts in Cantonese by about ten years of age.

As the present work is concerned with using a simplified approach to enhance tone receptive ability in the profoundly deaf, the performance of the profoundly deaf subjects is of primary interest.

Comparing the four subjects' performance across conditions of presentation, it can be seen that the auditory signal contributes to tonal reception via the Sivo-aid more effectively (see Table 2). Subject 1 and subject 2 performed better when using the Sivo-aid than when using their own aid. Subject 3 responded best to the larynx tones received via the Sivo-aid. Subject 4 was not able to identify the high level and low falling tones at all.

Table 2 about here

The Sivo-aid presented an auditory signal corresponding to the fundamental frequency of the utterance in the form of a sinusoid. The signal is well defined in periodicity, and frequency changes can be clearly conveyed. This accounts for the significantly higher scores in the Sivo-aid conditions as compared with those in the Own aid conditions for subject 1. He makes no use of the spectral information presented through his own hearing-aid. It is likely that the complex signal precludes the effective use of the available fundamental frequency information. The loss of acoustic information in the sinusoidal presentations is not associated with a potential loss in labelling efficiency. The scores for the Sivo-aid conditions are not significantly different from those in the Own aid conditions for the other three subjects. In fact, the scores are all slightly higher.

The general inability in lexical tone labelling can thus be attributed not so much to the loss of auditory information, but rather to the lack of listening experience to classify the auditory information meaningfully and accurately.

5 Training

Extensive training can make a lot of difference in speech perceptual tasks. White et al (1982), for instance, used a question/statement test to assess the perception of fundamental frequency contours of a patient using different speech coding schemes. Higher scores were obtained with the scheme which presented fundamental

frequency of the utterance only, but the score was not significantly different from chance. Fourcin et al (1979), however, reported significant improvement on the same task for their four patients using an auditory stimulation which presented only fundamental frequency. The patients reported in the latter study had had considerable training in labelling prosodic contrasts before they were tested.

While sinusoidal presentations can simplify the acoustic signal so that it is better matched to the limited sensory capability of the profoundly deaf listener, appropriate training can help in the development of the perception of tonal contrasts, so that it can be an important source of information for the lipreader.

The four subjects were given extensive training specifically on the tonal contrasts in Cantonese. They used the Sivo-aid for each training session so that the larynx frequency patterns of the speaker could be clearly presented auditorily. There was also a visual display to help them monitor their own production. Live training in perceiving and producing the tonal contrasts lasted fifteen minutes per session, and three sessions were given per week to each individual subject. The training programme initially went on for four weeks, after which the subjects were tested again.

Figure 5 compares the scores before and after training for the four subjects using the video-recorded lipreading tests, showing overall improvement with training. Table 2 shows the relative enhancement of labelling ability for each individual subject.

Figure 5 about here

Subject 1 showed confident labelling and performed perfectly when the larynx tones were presented via the Sivo-aid. He also scored 75% correct when using his own aid. There is learning effect for all lipreading conditions on the same task. Subject 2 demonstrated significant improvement, scoring 85% correct labelling when using her own aid and 90% correct using the Sivo-aid after training. Obviously she was not only gaining from the simplified signal but the increased listening experience also enabled her to make better use of the acoustic signal presented via her own aid. The results of subject 3 before and after training were not very much different. Although he was able to attend to the

differences between the two tones in live training, his labelling was not very confident. Further training is necessary so that he can better identify the perceived differences. Subject 4 is probably poorest in frequency resolution ability, although the pure tone audiogram does not give information relating to this aspect. His labelling score was 90% correct when larynx tones were presented via the Sivo-aid. The speech tones, which contain more spectral information possibly interferes with his effective use of the acoustic signal for identifying the contrasts between a high level tone and a low falling tone. While he was completely unable to classify the stimuli before training, he scored 60% correct when lipreading with auditory speech tones after training.

6 Further work

On the basis of the improved labelling ability of subjects 1 and 2, a third tone, the high rising tone was introduced. The subjects were first assessed using the video-recorded three tone lipreading tests. Subject 1 labelled the high level and low falling tones confidently, but was completely unable to identify the new tone. Subject 2 showed degraded performance and overall inability to classify the stimuli. The subjects were then given appropriate training on the three tone contrasts in Cantonese, using the Sivo-aid and the visual display. The subjects were re-assessed after ten training sessions.

Figure 6 compares the subjects' performance before and after training. Subject 1 showed overall improvement, and perfect identification when lipreading with larynx tones presented via the Sivo-aid. He also scored 83% correct using his own aid when listening to speech tones. Subject 2 scored 60% correct for the Sivo-aid condition, but her overall performance using her own aid was not better than chance.

Figure 6 about here

V Summary and Discussion

The present work uses a simplified speech pattern approach to enhance perception of tonal contrasts in Cantonese. The speech pattern is directly related to the larynx frequency of the speaker, which is known to aid lipreading most; and the simplification is implemented in the use of the Sivo-aid. Lipreading tests designed on the basis of speech patterns and graded in terms of

complexity are useful for identifying the difficulties, guiding specific training, and measuring learning effects. Appropriate training has led profoundly deaf subjects from a complete inability to discriminate tones to confident labelling and identification of lexical tones.

As speech pattern features may gradually increase in complexity to encompass more contrastive information, it would be possible to help profoundly deaf listeners to develop perceptual skills relating to suprasegmental as well as segmental contrasts in speech.

The simplification approach makes it possible to provide a better match to the hearing capabilities of the user, so that he could make better use of his residual hearing. While speech pattern features relating to periodicity can be better carried by sinusoidal presentations, the range of frequency variation can also be transposed to a region at which there is optimal discriminative ability. So long as the essential patterns are preserved, the information thus presented can be usefully employed for speech perception.

Especially when working in a tone language environment, hearing-aid design or stimulation techniques need to take into consideration the potential benefits obtainable with the profoundly deaf listener using a speech pattern extraction and simplification approach. Assessment and rehabilitation work guided by this knowledge would speed up learning process and ensure meaningful results, both with regard to the development of perceptual skills as well as adequate expressive skills.

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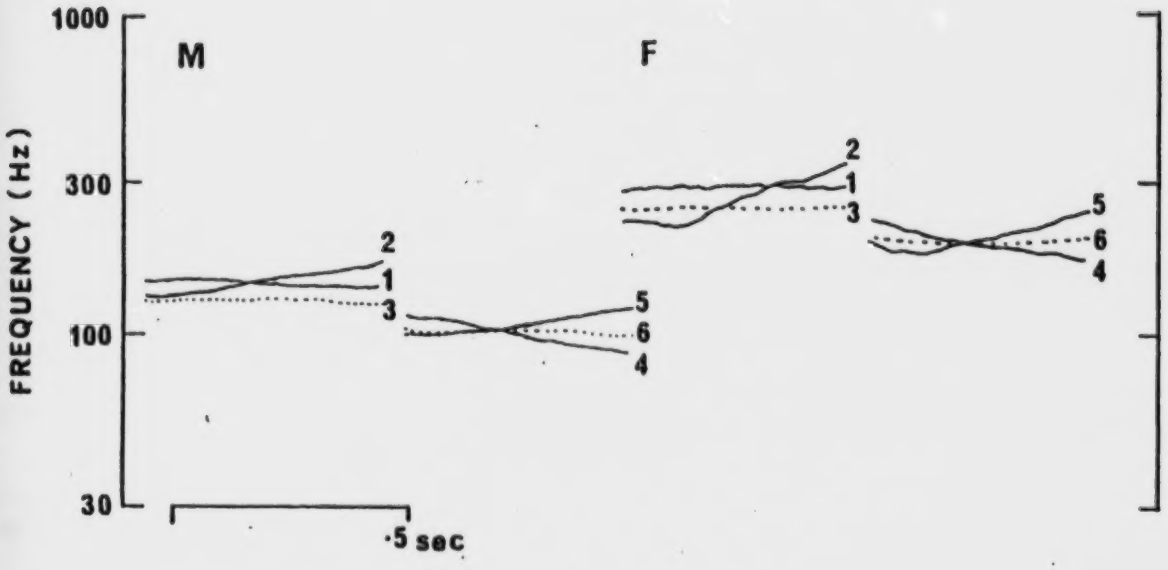
Fx PATTERNS OF TONES



CANTONESE TONES

1 HIGH LEVEL	4 LOW FALLING
2 HIGH RISING	5 LOW RISING
3 MID LEVEL	6 LOW LEVEL

Figure 1 gives the fundamental frequency patterns (measured on a period-by-period basis) of the Cantonese tones produced by a male and a female speaker. The relative patterning of the tonal contours is the same, although there are absolute differences in frequency.

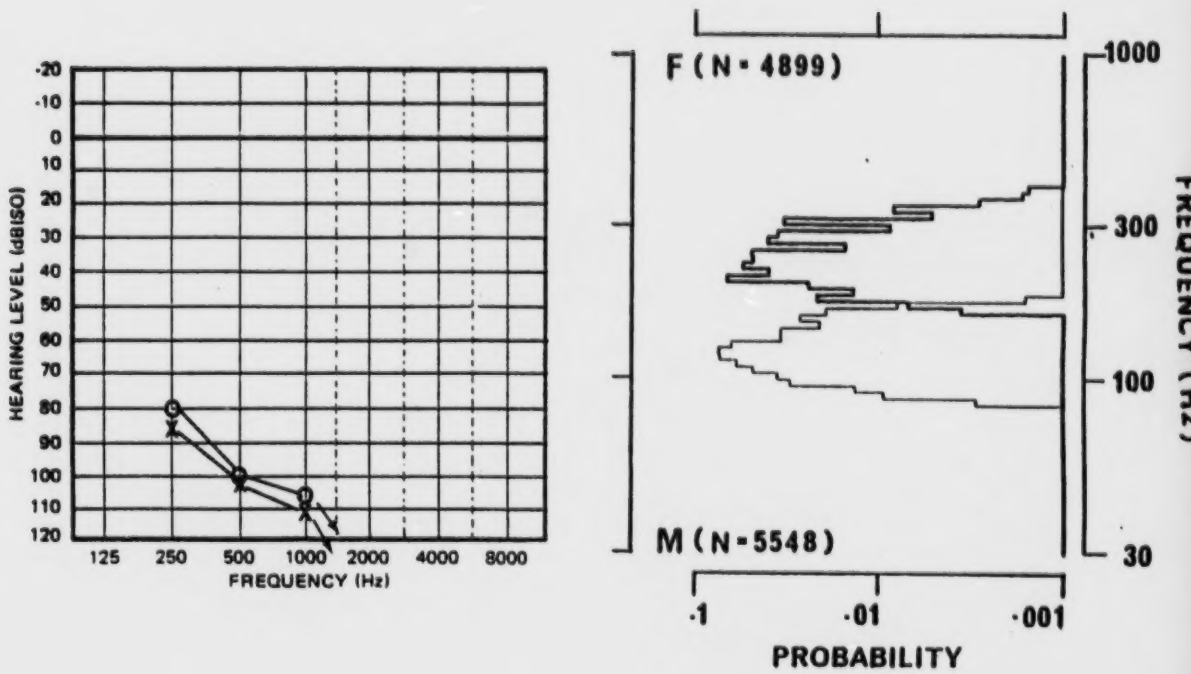


Figure 2 shows a typical left-hand-corner pure tone audiogram and the fundamental frequency distribution of two adult Cantonese speakers, a male and a female. The frequency range at which there is measurable hearing coincides with that of voice pitch variations in speech.

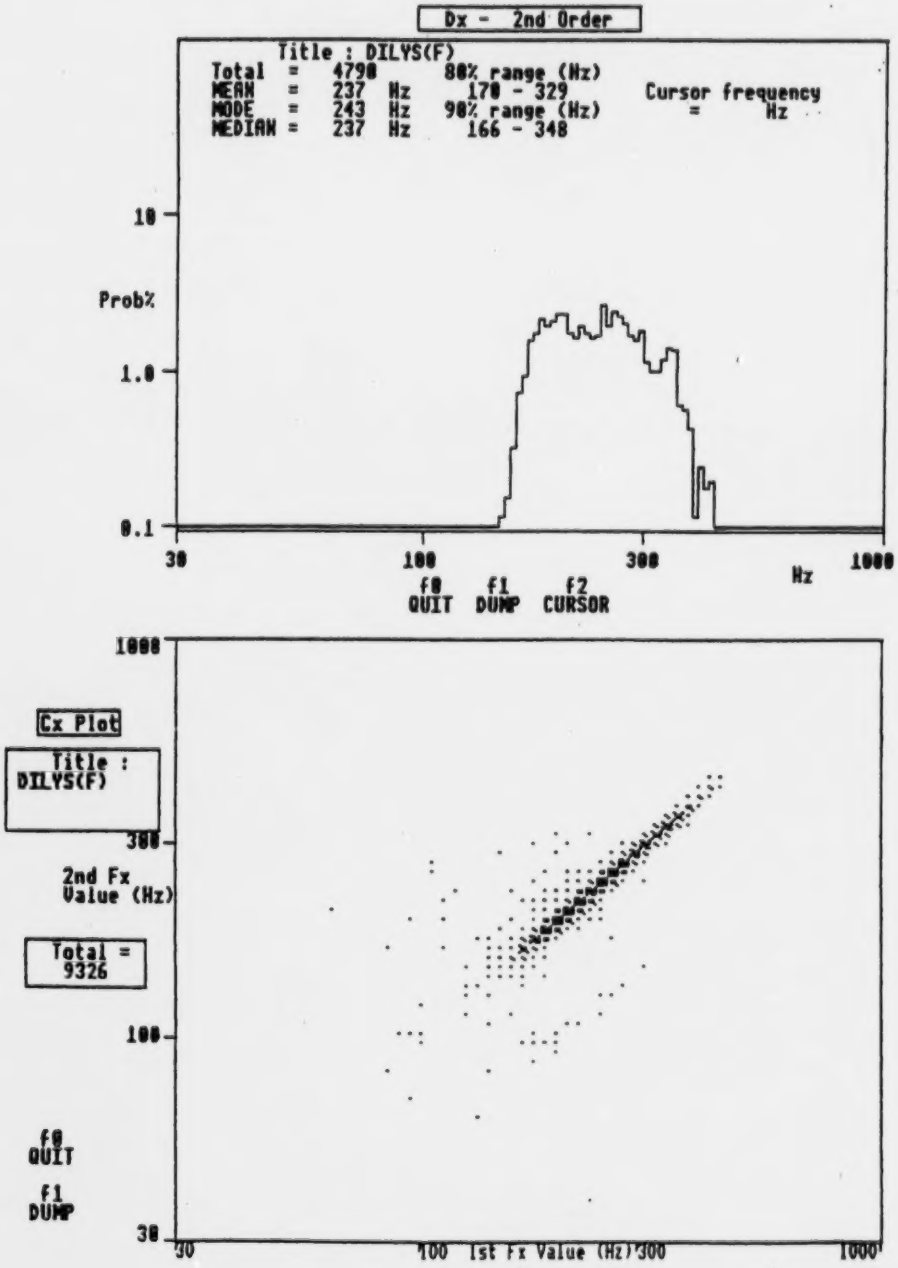


Figure 3 presents the fundamental frequency distribution of the speaker used for producing the tonal stimuli. Her range is indicated by the scatter plot.

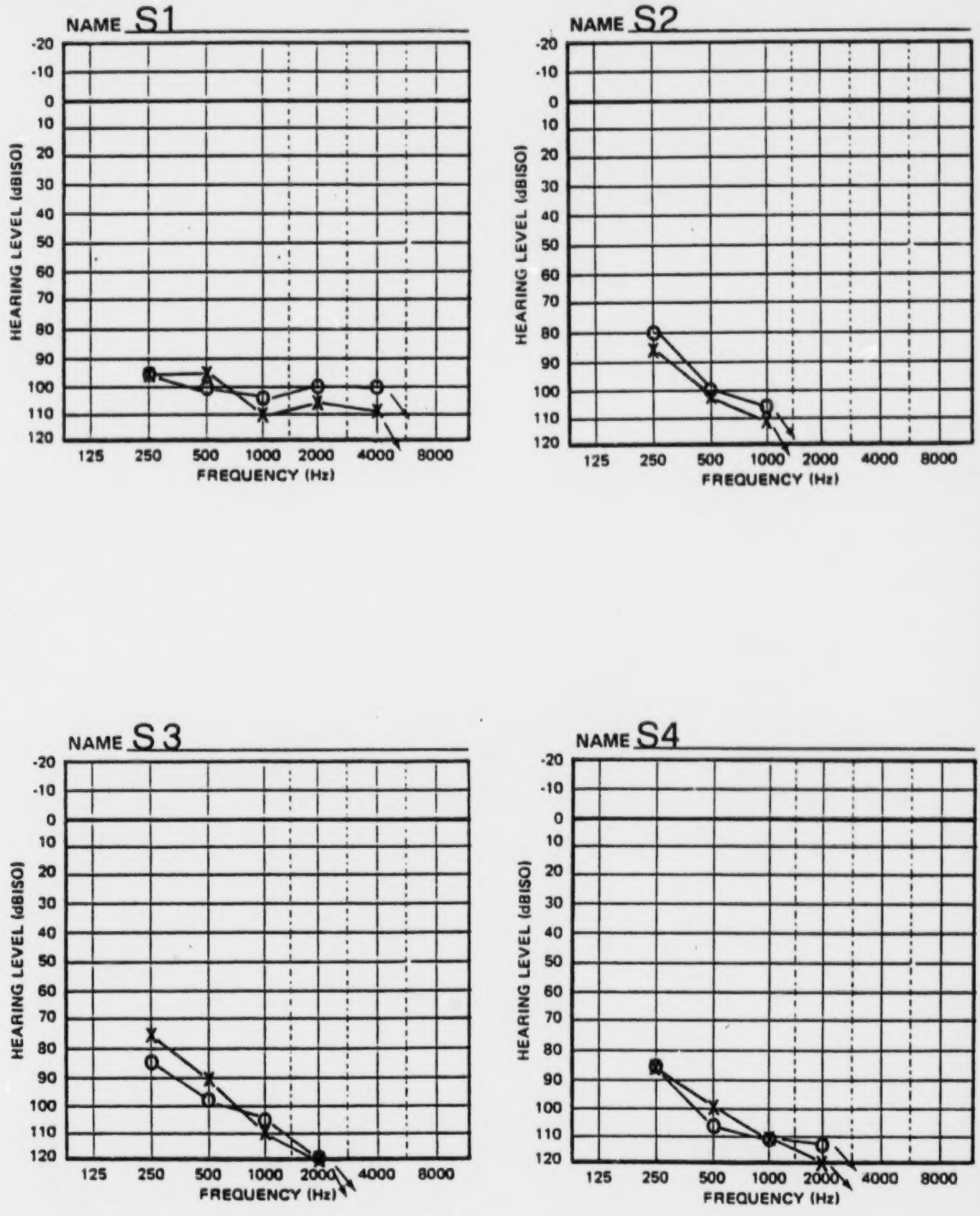


Figure 4 gives the pure tone audiograms of the four profoundly deaf children who served as subjects.

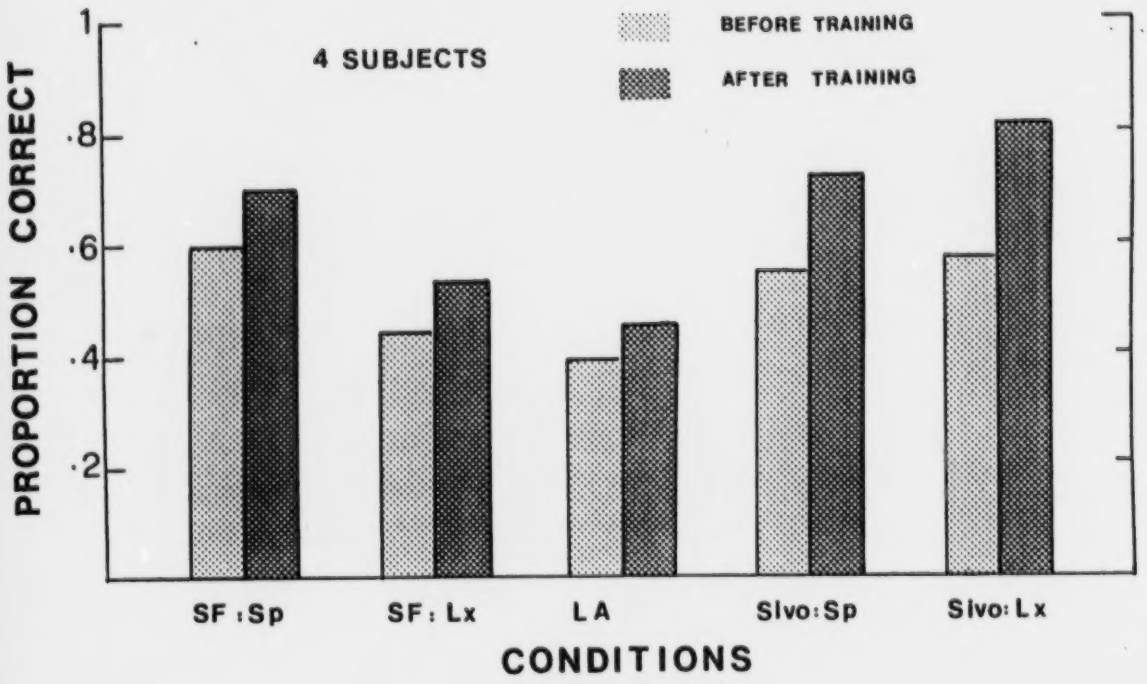


Figure 5 shows the labelling of the four subjects when lipreading with their own aids (SF), lipreading with no auditory stimuli (LA) and lipreading with the Sivo-aid (Sivo). The auditory stimulus, when present, is either speech (Sp) or larynx tones (Lx). Proportion of correct labelling before and after training is compared for the subjects. Two-tone contrasts were used as stimuli.

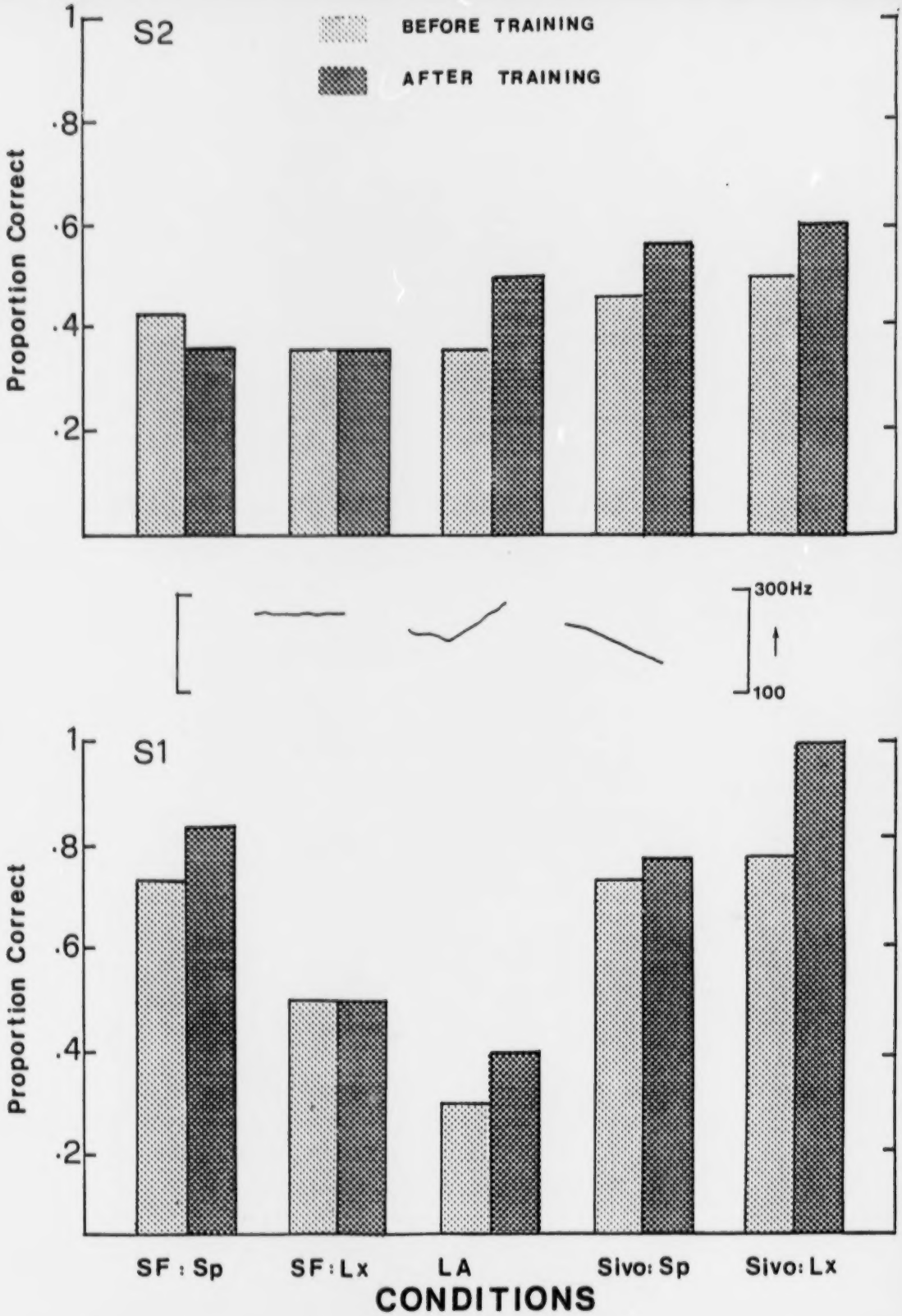


Figure 6 compares the labelling performance of two subjects before and after training for the five conditions.

LIPREADING CANTONESE TONES

HIGH LEVEL : LOW FALLING

Conditions	Lips + Speech	Lips + Larynx tones	Lips Alone
	Proportion correct (%)		
Control group:			
P31	50	50	50
P32	55	55	55
P33	60	55	40
P34	75	75	55
P35	55	50	40
P36	50	60	55
P37	100	75	45
P38	50	65	55
P41	60	60	25
P42	45	60	40
P43	60	50	40
P44	55	65	45
P45	70	50	45
P46	85	70	50
P51	50	45	50
P52	75	50	60
P53	55	60	45
P54	70	60	40
P55	45	65	25
Subjects			
S1	70	45	45
S2	60	30	35
S3	60	40	25
S4	50	50	50

Table 1 gives the results of the two tone labelling tests. Twenty-three children took the tests, and they lipread under three conditions: lipreading with speech tones, lipreading with larynx tones, and lipreading alone. The children used their own aids in conditions with auditory stimuli.

LIPREADING CANTONESE TONES

HIGH LEVEL : LOW FALLING

Conditions	Own aid + Speech	Own aid + Larynx tones	Lips Alone	Sivo aid + Speech	Sivo aid + Larynx tones
Proportion correct					
S1 (Before Training)	14/20	9/20	9/20	16/20	15/20
(After Training)	15/20	12/20	12/20	17/20	20/20
S2 (Before Training)	12/20	6/20	7/20	13/20	8/20
(After Training)	17/20	13/20	7/20	18/20	14/20
S3 (Before Training)	12/20	11/20	5/20	6/20	13/20
(After Training)	12/20	11/20	8/20	10/20	13/20
S4 (Before Training)	10/20	10/20	10/20	9/20	10/20
(After Training)	12/20	7/20	10/20	12/20	18/20

Table 2 Individual labelling scores of four subjects before and after training for the five conditions in a two-tone lipreading test.

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WORD FORMATION AND THE LIMITS OF ANALYTIC EQUIVALENCE

Peter Crisp
CUHK

I want, in this article, to discuss the relationship between complex words such as man-eater and self-locking and phrases such as eats men and locks itself. There is an obvious morphological relationship between the cited words and phrases; the average native speaker of English would, as a consequence of this relationship, regard the two words as each being derived from the phrases with which they are morphologically paired. She would also almost certainly accept that, to use the common and extremely vague formula, each pair of words and phrases means the same thing or has the same meaning. The perceived relationship of derivation creates an especially strong sense of semantic relatedness. Such popularly perceived equivalences of meaning could be regarded as providing test cases for the notion of analytic synonymy and so, by extension, analytic hyponymy, synonymy being simply reciprocal hyponymy.[1] If man-eater and something which eats men are not analytically equivalent, if being something which eats men is not an analytically necessary and sufficient condition for being a man-eater, then, one might ask, what other plausible candidates for analytic equivalence are there?

Before turning specifically to the issue of analyticity and morphological relatedness, I want to emphasize generally just how questionable judgements of analytic synonymy can be. The average, 'unphilosophic', native speaker of English, if asked whether or not mother and female parent mean the same thing would probably say yes. Mother and

female parent are prime candidates for analytic synonymy. It is however perfectly conceivable that there should be female parents who are not mothers, and there may well be such mothers. The author Jan Morris, for example, who published a well received book on Hong Kong two years ago, is a woman. She used however to be a man: she has undergone a sex-change operation. While she was a man she fathered children. She is a female parent who is not a mother.[2] Female parent and mother are not analytically synonymous: you can be a female parent without being a mother. Some people might question whether those who undergo 'so-called' sex-change operations really change sex, though contemporary usage seems content to refer to them as women. However, even if such people don't 'really' change sex it is perfectly easy to conceive of a sex-change whose reality nobody would dispute. Conceive of a transformation right down to the level of chromosome structure so that XY chromosome pairs are replaced by XX ones. Female parent and mother are not analytically equivalent.[3] The proponent of analyticity might reply that mother is still an analytic hyponym of female parent; however, since most people, prior to having the implications of sex-change pointed out to them, would unhesitatingly say that mother and female parent mean the same thing, the fact that they are not analytically equivalent must call into question judgements of analyticity generally. For this is no mere borderline case: a central judgement of synonymy turns out to be reviseable in the light not even of some profound theoretical transformation but, simply, of advances in medical technology.

The semantic relationship between man-eater and eats men seems peculiarly direct. An agential noun has been formed by the common process

of suffixing -er to an object-verb compound, the compound not being a free form, and so yielding the meaning "something which eats men." Lexical processes are of course often highly idiosyncratic and we cannot predict that an agentive compound of this type will always have this kind of meaning. Nevertheless, the semantic structure of man-eater is typical of this class of nouns and as a consequence the direct semantic relationship between it and something which eats men would seem to be a prime candidate for the class of analytic equivalences. We should not, strictly speaking, say that man-eater is derived from eats men, for the relationship of derivation holds between lexemes and the phrase eats men contains a specific inflected form of each of its two lexemes. Yet in discussing the semantics of man-eater we naturally relate it to the specific phrase cited and not just generally to the lexemes it is derived from. This pattern is true of agentive nouns, both compound and non-compound, generally. The use of present tense in the verb and plural number in the noun of the cited phrase's relative clause leads to an interpretation in terms of habitual aspect: what is at issue is the habitual eating of men. This is not surprising as the derived word is a noun and nouns are associated with stative meaning. To say of something that it is a man-eater is therefore to refer not to some transient act but to an at least semi-permanent habit or disposition that possesses it. This is all straightforward enough, but has profound implications for the semantics of agentives.[4]

A little science-fiction: it has been found that tigers and other animals which have developed the habit of eating men have a specific conformation of the brain which is unique to them. Research has further established that this conformation is no mere concomitant of habitual

man-eating but is actually its cause. A post-mortem is being carried out on Leo, an inappropriately named tiger who has spent a long and uneventful life in a zoo. The dissecter is scrutinizing Leo's brain with a powerful microscope when he suddenly realizes that he is looking at the brain conformation known to be the cause of habitual man-eating. He thinks of Leo's reputation amongst his keepers for being cantankerous and potentially dangerous - "My God! Leo was a man-eater." Such an exclamation is easily imaginable and my linguistic intuitions at least tell me that such a use of man-eater would be perfectly literal and not involve any metaphorical 'stretching' of sense.Leo would truly be a man-eater, one who had never had the opportunity to express his man-eating nature. What is happening here seems clear enough. The stative semantic orientation of the noun man-eater is not necessarily limited to the noun's being taken to refer to entities with a habit of eating men. If an underlying state is postulated which accounts for this habit than the noun is taken to refer to entities in this state. So if the underlying state is found to be present but the habit is absent the entity is judged to be a man-eater. Moereover, if the habit is present but the underlying state is not, something might well be judged not to be a man-eater. If a tiger which has eaten a number of men is killed, subsequently dissected and found not to have the man-eating brain conformation, we might well say, speaking quite literally, that "He wasn't really a man-eater." A sequence of accidents or whatever must have led to his eating the men. My own intuitions are not in this case as strong as in the previous one, but it is certainly not obvious such a tiger would truly be a man-eater, and something like obviousness is needed for a judgement of analyticity.[5] So being something which eats men is neither an analytically necessary nor an analytically

sufficient condition of something's being a man-eater. In our science-fiction world it would simply be typically true of man-eaters that they ate men.

This analysis of man-eater is very similar to Hilary Putnam's essentialist account of natural kind terms.[6] If the man-eating brain conformation existed it would probably constitute the full blown a posteriori essence of being a man-eater, a necessary and sufficient condition discovered empirically and not intuited a priori.[7] In our science-fiction world man-eaters would probably be a natural kind. It is empirically absurd to suppose that man-eaters are a natural kind but not in principle, I hope I have shown, inconceivable. In reality being something which eats men is the sole practical criterion for being a man-eater, but this does not create an analytic equivalence between man-eater and something which eats men. That this kind of analysis can be applied to an agentive is striking, for Putnam himself thinks that it can't be: perceived relations of derivation create strong convictions of meaning identity.[8] The case of man-eater shows that such convictions are not infallible. Man-eater, like mother, gives rise to a central case of supposed analytic synonymy. Its failure to actually generate an analytic equivalence calls claims for such equivalences in general into question; for a claim to intuit an analytic equivalence is a claim to a priori knowledge and the possibility that an unforeseen exception, as with mother or man-eater, may always turn up makes such a claim impossible. In the case of agentives generally it is easy to imagine how the supposed equivalences might be broken. Utterances such a "He's a real actor" or "He's really a climber" are frequently produced when the individuals

referred to have never acted or climbed a mountain.[9] Of course, there's no doubt that in these cases the agentives' meanings are being metaphorically 'stretched'; the individuals involved are taken to be like actors or climbers in having qualities that could or should have made them actors or climbers. However, if we seriously thought there was an unchanging set of such qualities, such as we imagined for man-eater, then such uses could cease to be metaphorical. There are in reality no qualities of this type and in the case of human beings, where our resistance to crude reductionism is much stronger than in the case of tigers, it is rather difficult to enviseage such sets in a plausible fiction. But the semantic potentiality is there.

Let's turn from agentive nouns to a similar type of adjective. At first glance any native speaker of English would probably say that self-locking means the same as locks itself, that, for example, a self-locking door has necessarily to be a door which locks itself. Self-locking can occur both attributively and predicatively. I'll look first at the attributive use. A self-locking door which doesn't work is perfectly conceivable, so indeed is a self-locking door which has never and will never work. Such a door would be one manufactured so as to lock itself but not functioning as intended. There is no doubt, I think, that we would refer to such a door as a self-locking door: the sentence This company's self-locking doors never work is perfectly acceptable. Such a door would be a self-locking door which has never and will never lock itself.[10] There is no analytic equivalence between attributive self-locking and which locks itself. What is going on here is similar to what went on with man-eater in our science-fiction world. Attributive

adjectives, pre-modifying in the noun phrase, have a strong association with permanent and semi-permanent rather than temporary properties. Like nouns generally they are oriented towards stative meaning. Attributive self-locking thus 'attaches' itself to any permanent property, such as being of a certain manufactured type, which accounts for a door's habitually locking itself. If the permanent property is present but the actual action of locking itself is absent, the door is still a self-locking door. Yet this analysis does not of itself rule out an account of attributive self-locking in terms of analyticity. Since there is no dramatic reversal of our conceptions of what is possible, for there's nothing very surprising about a self-locking door that doesn't work, and since the notion of somethings's locking itself is still involved in that of an entity designed to lock itself, the analysis could be seen as 'unpacking' our original, and tacit, a priori intuitions of what attributive self-locking means. Nor does this analysis provide a necessary and sufficient condition for something's being a self-locking door, for a door which was not designed to lock itself but still, by chance, habitually did so would still clearly be a self-locking door. The analysis provides two sufficient conditions which could be regarded as analytically sufficient.[11] Any simple equivalence between attributive self-locking and which locks itself is broken, but the role of analyticity is not automatically denied.

The similarity of the above analysis to that of man-eater has been noted. But the differences are also very great. With man-eater a man-eating brain conformation would probably constitute an a posteriori essence, but the above analysis provides only sufficient, and not

necessary and sufficient, conditions which are not obviously a posteriori. Could the stative orientation of attributive self-locking allow for an a posteriori essentialist analysis? It is frequently asserted that sentences such as All pencils are inanimate are analytically true. Putnam however argues that this is not so, that, if we discovered against all expectation that the things we call pencils are in fact animate, we would not say that the world contains no pencils but that pencils are, amazingly enough, animate.[12] I take it that Putnam is correct. Imagine a world in which it is discovered that the things we call self-locking entities are animate, their self-locking behaviour being a primitive reflex of the kind we find amongst certain molluscs. Such entities would still be self-locking doors, even though they were animate. Someone comes across a seemingly ordinary door which does not lock itself but on analyzing it finds it to have all the non-obvious, animate, characteristics of a self-locking door: "This is a self-locking door!" she cries, quite literally. Since there is no conceptual link between the notion of something's locking itself and the criteria of animacy etc., such criteria would be non-analytically sufficient for something's being a self-locking door.[13] Would they also be non-analytically necessary? Would we, in our science-fiction world, say, literally, of a door which locked itself but wasn't animate etc. that "This isn't really a self-locking door"? My own intuitions here are unclear, much more so than in the parallel case with man-eater.[14] Yet, as with man-eater, this very lack of clarity makes it hard to contend that a door's locking itself is an analytically sufficient condition for its being a self-locking door, even if its not clear whether a full blown a posteriori essentialist analysis is applicable. Thus the previous paragraph's analysis is not to be seen in a priori terms, for there is no

analytic definition proper of attributive self-locking. Its analysis shows the beginning, which doubtless will never actually go any further, of an a posteriori detachment of attributive self-locking from the notion of something's locking itself.

But what of predicative self-locking? Someone could say of an animate door with a dysfunctional self-locking reflex that "This is a self-locking door," but they could not say "this door is self-locking."[15] It's easy to see why this is so. Predicative adjectives lack the stative semantic orientation of attributive ones; thus, even if an entity has some underlying permanent property which gives rise to its dynamic properties a predicative adjective will not become 'attached' to this permanent property, and so will not be'detached' from those properties which are dynamic. Thus if a door fails to lock itself in all circumstances it cannot be described as being self-locking. It is true that predicative self-locking is interpreted in terms of habitual aspect - the sentence This door is usually self-locking but doesn't work at the moment would be perfectly acceptable - but it lacks the true stative orientation of an attributive adjective. Even if a door was designed to lock itself, if it never worked it would still not be self-locking. One would never say of such a door that "This is self-locking." Predicative self-locking is not able even to reach the first stage of detachment from the dynamic property of something's locking itself which attributive self-locking actually has reached. Does this mean that predicative self-locking and locks itself are analytically equivalent?

A major objection to the notion of analytic synonymy, we've seen, is that once supposedly central cases of such synonymy are shown not to be so, all analytic judgements are called into question for you never know what may turn up. Cases where we cannot dream up any science-fiction 'revision' are seen to be simply too deeply embedded in our current conception of the world for us to think our way round them, that conception itself being ultimately reviseable in the light of empirical evidence. Mere appeals to supposed intuitions of analyticity carry no weight. Could the assertion that predicative self-locking and locks itself are analytically equivalent be based on anything more than such an intuition? The analyses of man-eater and attributive self-locking have involved a particular application of the idea that a term's extension ultimately determines its sense, that there are no a priori limits to what we may discover about that extension.[16] What is particular to these analyses is the role of stative orientation. When a stative word is related by lexical derivation to a dynamic phrase it is the role of that word's stative orientation in fixing its extension that makes possible its detachment from the dynamic phrase's sense, which enables the extension to ultimately determine the sense. If stative orientation is absent, as with predicative self-locking, then the extension is not fixed in a way allows the word to be detached from the dynamic phrase's sense. This is to say that the idea that predicative self-locking and locks itself are analytically equivalent is based on more than just pure intuition. Generally, extension is the ultimate determinant of sense, but we can show why this is not so in this case. There is a parallel case with deictics; these can give rise to analytic entailments because they do not have any fixed reference, any extensions discoveries about which could modify their

senses.[17] Judgements of analyticity, applying to very restricted classes of items, can be motivated in terms of a semantic theory. Such theories are not themselves of course infallible and so neither are the judgements of analyticity made relative to them. But if we have an intuition of seeming analytic equivalence there's seems to be nothing inconsistent in making an inevitably fallible prediction that this intuited equivalence would in fact obtain in all possible worlds. Predicative self-locking and locks itself are analytically equivalent.

The kind of contrast we've seen between attributive and predicative self-locking also has relevance to the analysis of agentive nouns. I've argued that all such agentives have a semantic potential for detachment from the dynamic senses of their lexically related phrases. However it is crucial to distinguish between the role of a noun such as climber when it is used as what we may term an agentive proper and when it is used in a nominalization such as the climber of that tree, where the internal structure of the noun phrase systematically corresponds to the structure of a clause. That there is a profound difference here is shown by the fact that although the suffix -er is highly productive it is still, as far as agentives proper are concerned, of limited productivity while in relation to nominalizations it is of virtually unlimited productivity. Thus the sentence *He was a flouter is unacceptable while He was a mere flouter of petty regulations is not.[18] Exactly how nominalizations should be analyzed in terms of their relationship to the lexicon is beyond the scope of this article. The crucial point here is the semantic difference between words such as climber when they occur within and when they occur outside of nominalizations. Occurence within a nominalization cancels stative

orientation. Thus while to refer to somebody as "the climber" is to pick him out, relative to some particular context, as the person who habitually climbs hills or mountains, to refer to him as "the climber of that tree" may mean no more than that he has once climbed or is now climbing the tree.[19] Climber in a nominalization is like predicative self-locking only even more so: it may not even involve habitual aspect - the climber of a tree may or may not climb it habitually - and so is totally lacking in stative orientation. Thus, for the kind of reasons discussed in the previous paragraph, climber within a nominalization is analytically equivalent to someone who climbs something. This kind of analysis is not relevant to a compound agentive such as man-eater, since the phrase *the man-eater of men is obviously unacceptable. However, it is relevant to this noun's relation to the purely attributive adjective man-eating. This of course shares the stative orientation of man-eater and so its relationship to man-eater relative to this orientation is analogous to that of predicative self-locking to locks itself relative to dynamic orientation. Man-eating tiger is thus an analytic hyponym of man-eater.

I seem to have released if not a flood at least a substantial trickle of analytic equivalences rooted in perceived relations of lexical derivation. It might indeed seem that it is only the shift from dynamic to stative meanings which in this area dissolves the bonds of analyticity. To show that this is not so I shall conclude with an example which involves no such shift, nor does it involve the noun phrase. No-one would suppose that the adjective unhappy is analytically equivalent to not happy. Since happy and unhappy are gradable antonyms, everyone would agree that it is possible to be not happy without being unhappy. However, many would argue

that unhappy is an analytic hyponym of not happy, the perceived relation of lexical derivation between the two items making this seem to them virtually self-evident. This is not so. One can easily imagine some pessimistic psychoanalytic account of being happy which would go something like this: to say of someone that they are happy is simply to say that they are unhappy in a special way. One may find such an account of what it is to be happy highly implausible, but it is not inconceivable nor does it involve any metaphorical stretching of its terms. Such an account would claim to have discovered the psychological structures underlying the state of being unhappy and to have discovered that these same structures underly that of being happy. It would claim that what differentiates being happy specifically is a set of structures in addition to those underlying being unhappy generally which disguises the presence of these latter structures. Unhappy would no longer be in a relationship of antonymy but of superordination to happy. It would therefore no longer follow that if someone was unhappy that they would be not happy: they might or they might not be. Unhappy is not an analytic hyponym of not happy. The failure of perceived relations of lexical derivation to guarantee analytic synonymy or hyponymy seems quite pervasive. The failure in this particular case is a function of a kind of argument one can imagine being mounted with regard to many pairs of gradeable antonyms: to be beautiful, it might be argued relative to the nature of the psychological states involved in the experience of beautiful and ugly things, is simply to be ugly in a special way.[20]

This article has been suggestive, I hope, rather than systematic. Its main aim has been to show just how dubious judgments of analyticity in

general are by showing that they can fail in an area where their presence may seem almost self-evident. Yet it has also tried to show that one can motivate the postulation of certain, very restricted and undoubtedly trivial, classes of analytic truth. I don't have any exhaustive list of just what relations of lexical derivation do and what don't give rise to relations of analytic synonymy and/or hyponymy. But I hope I've shown that one could at least set about constructing such a list. The circumscription of classes of analytic truth has a role to play in semantic theory, but the idea that the notion of analyticity provides any kind of foundation for such a theory is untenable.

NOTES

1. The, standard, definition of synonymy referred to here applies of course only to lexically based synonymy, hyponymy being a lexically based relation. As well as talking of synonymous words and phrases we also talk of synonymous sentences, such as Jill likes John and John Jill likes or Jill kicked the ball and The ball was kicked by Jill, which do not differ at all in terms of their lexical content but only in terms of the ordering of their elements or their grammatical structure. Synonymies, or claimed synonymies, of this type are quite beyond the scope of this article, which is an exercize in strictly lexical semantics.

2. The implications of sex change for the supposedly analytic relations between father, mother, parent, female and male are dealt with in an article by Peter Geach, which I read some years ago but which I can, unfortunately, no longer locate.

3. Geach points out that a woman who fathered children when she was a man is either a female father or someone who used to be a father but has ceased to be such without ceasing to exist. One doesn't, in the light of his linguistic intuitions, know which of these disjuncts is true but clearly one of them has to be. However, both of them would be prime candidates for analytic falsehood, as long as the topic of sex change wasn't raised.

4. Geoffrey Leech's observations on agentives such as driver, copywriter

and bed-maker have some relevance here: see Geoffrey Leech Semantics 2nd ed. (Harmondsworth: Penguin, 1981), pp.31-2. Leech notes that such nouns are not simply synonymous with phrases such as someone who makes beds but denote professional or avocational categories of people who make beds etc., membership in such a category constituting, I would point out, a semi-permanent state or property. This kind of agentive forms a distinct sub-class of agentives and shows that the relationship between an agentive and its related verbal meaning may be quite indirect. Leech, as a strong proponent of analyticity, would presumably argue that even in these cases there is still a relation of analytic hyponymy between the agentive and its partial definiens: however, I shall argue, even with more 'direct' agentives such as man-eater this relation is in fact so 'indirect' as to be non-analytic.

5. It should be pointed out that a linguistic intuition is simply a prediction about our putative linguistic behaviour in a range of possible situations, some of which may have been or will be actualized but many of which never will be. Such predictions are likely to be more or less confident and there's no obvious reason to suppose that any of them are infallible. One of the problems of theories of analyticity is to make plausible the notion of an infallible prediction.

6. See Hilary Putnam, "The meaning of 'meaning'" in Mind, Language and Reality (Cambridge: Cambridge University Press, 1975), pp.215-271. Putnam's account of such terms converges with that of Kripke, whose

analysis of them is an extension of his analysis of proper names: see Saul A. Kripke, "Naming and Necessity" in Semantics of Natural Language (Dordrecht-Holland: D. Reidel, 1972) ed. D. Davidson and G. Harman, pp. 309-334.

7. The qualification "probably" is used here because whether the man-eating brain conformation would be a necessary condition of something's being a man-eater is, we've seen, somewhat less certain than whether it would be sufficient.

8. See Hilary Putnam, Mind, Language and Reality, p.244. Putnam mentions, in just two sentences, word-phrase pairs such as hunter and one who hunts, assuming that such words are transformationally, as opposed to lexically, derived from the phrases. This transformational approach is not widely supported now, though it is important to distinguish between the lexical creation proper of agentives and their occurence in noun phrases such as "The climber of that tree." This distinction will be discussed later.

9. Actor and possibly climber belong to the sub-class of agentives referred to in note 4 and so would involve claims of analytic hyponymy rather than synonymy.

10. We tend of course to avoid sentences such as This self-locking door has never locked itself because they sound somewhat incongruous due to the strong association of self-locking with the fact of something's locking itself. However, this association, at least in the case of

attributive self-locking, is only a matter of association, as the sentence to which this note is appended shows. It is a sentence of the kind we usually avoid but seems perfectly justified.

11. Analyses in terms of analyticity usually employ the notion of analytic hyponymy. Since this notion involves that of a necessary condition it does not apply here, but the notion of an analytically sufficient condition is in itself perfectly coherent.

12. See Hilary Putnam, Mind, Language and Reality, pp.242-245. The meaning of most terms with extension is not a function of those, sometimes mistaken, descriptions which initially help us to fix that extension but ultimately of the properties of the entities within that extension. Reference thus frequently determines sense.

13. It might be thought that there is an intrinsic conceptual link between the notion of a reflex which causes things to lock themselves and the notion of something's locking itself, but this is not so. Such a reflex could be described in electro-chemical terms which made no reference to the behaviour to which it gave rise. Its relation to that behaviour would be causal and not conceptual.

14. It is somewhat less certain, I argued, that the man-eating brain conformation would be a necessary, as opposed to sufficient, condition of something's being a man-eater. The considerably greater asymmetry, with regard to judgements of necessity and sufficiency, in the case of attributive self-locking must be due to the fact that the stative

orientation of an attributive adjective is inevitably less than that of a noun, and so the adjective's 'attachment' to any postulated, underlying and permanent properties, here animacy etc., is somewhat less than a noun's.

15. Note, by the way, the use in this sentence of attributive self-locking in the phrase dysfunctional self-locking reflex. It is perfectly natural and cannot, in combination with dysfunctional, be analytically synonymous with which locks itself. Note also that the sentence *The dysfunctional reflex is self-locking is totally unacceptable since it involves a selection restriction violation - (I use the latter phrase without assuming that such 'restrictions' have any basis in analyticity). Attributive and predicative self-locking relate to reflex in totally different ways.

16. Crucially, to elaborate a point made in note 12, descriptions originally used in helping to fix a term's extension may eventually be seen to be false of at least some of the entities in that extension. Thus the description something which eats men certainly plays an indispensable role in fixing the extension of man-eater but, we've seen, we could still conclude that there are man-eaters of whom this description is false.

17. The kind of entailment I have in mind is that which holds between a token of the sentence It rained yesterday uttered on February 25, 1989 and all tokens of the sentence It rained on February 24 1989 uttered after February 24, 1989. I assume, following Quine,

that inference relations in natural language hold between contextualized sentence tokens and not propositions: see W.V. Quine, Philosophy of Logic (Englewood Cliffs, N.J.: Prentice Hall, 1970), pp. 13-14.

18. See Randolph Quirk, Sidney Greenbaum, Geoffrey Leech and Jan Svartvik, A Comprehensive Grammar of the English Language (New York: Longman, 1985), p.1547-1548, note.

19. The radical difference between the two different contexts of climber is further shown by the fact that the agentive proper displays the typically lexical phenomenon of a narrowing of meaning relative to the phrase someone climbs something. A climber climbs, specifically, mountains, hills or cliffs. Climber in the nominalization displays no such narrowing of meaning and so relates directly to the semantics of the verb climb.

20. Interestingly, this kind of argument doesn't seem to be easily available for pairs of binary antonyms. One easily imagine arguing that to be alive is merely a special case of being dead, but in any practically imaginable case this would surely involve a metaphorical stretching of the sense of dead. This does not mean that binary oppositions are based in analyticity, for there are no factors involved like those in the case of predicative self-locking and, if the approach of this article is correct, it is massively implausible to suppose that so central a semantic relationship as that of binary anonymy could as such have an analytic basis. Such

oppositions are simply too deeply embedded in our, ultimately empirical,

conception of the world for us easily to think our way round them. I don't know exactly why it is easier to dismantle the oppositions of gradeable as opposed to binary antonyms, though such oppositions are in a general way less 'sharp' and absolute.

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Interlanguage Ergative Constructions and Learnability

Virginia Yip
CUHK

1.Introduction

This paper examines a class of interlanguage structures regularly mass-produced by Chinese learners of English. Chinese learners are noted to overextend passivization to a class of verbs known as 'ergatives.' Previous studies have shown that the English ergative verbs pose an acquisition problem in second language acquisition for learners of various mother tongues (Kellerman 1978, Zobl 1989). Even very advanced learners have difficulty acquiring the ergative construction, and consistently passivize this class of verbs. A comparative study of the ergative construction in Chinese and English shows that they share similar properties; however, this does not seem to facilitate the acquisition of the target English construction, contrary to the prediction of the Contrastive Analysis Hypothesis (Fries 1945, Lado 1957). Furthermore, the passivized ergatives are not attributable to exemplification in either the L1 or L2: this distinct type of interlanguage (IL) structure provides a clear example of how IL takes on a life of its own, as it were.

We proceed to discuss the ensuing questions of learnability. The overgeneration of passivized ergative constructions poses a learnability problem: in the absence of negative evidence, there seems to be no straightforward way to reduce the scope of passivization. To illuminate the problem, we shall make use of insights provided by two learnability theories: the Subset Principle (Berwick and Weinberg 1984) and the Uniqueness Principle (Pinker 1984). A partial solution is outlined, involving preemption in accordance with the Uniqueness Principle: for a sub-class of ergative verbs, the passive can be preempted by the ergative construction. For the more recalcitrant cases, there is no such basis for preemption, hence, we hypothesize, their subsceptibility to fossilization.

2. Chinglish Data

A certain group of English verbs are consistently mis-passivized in Chinese speakers' IL, (which will be referred to as 'Chinglish'[1]). A few examples from learners' essays are given below:

(1) This kind of diglossic situation can only be appeared in society where the two different variations of language should not be too different and too similar. (advanced)

(2) I do not think that such abusive action should be happened to a twelve-year old child. (advanced)

(3) Rush hour traffic can be vanished because working at home is a new version. (intermediate)

(4) For last 15 years computers have drastically affected our life and this will be continued in the future. (intermediate)

Further examples from written compositions are cited in the Appendix.

The verbs which are passivized incorrectly in Chinglish belong to a particular class with its own special properties. Below we shall examine these properties in detail, with particular reference to the roles of syntax and semantics.

3. Ergative Constructions in English and Chinese

To address the learning difficulty and the learnability problem, we need to conduct an in-depth analysis of both the target and the L1 structures. Below we present an analysis of the ergative construction in English and Chinese.

3.1 English Ergative Verbs

Perlmutter (1978) first discussed a class of 'change-of-state' verbs, which he called 'unaccusative.' Syntactically, they resemble active intransitive verbs in that they subcategorize for a single argument and that argument generally appears on

the surface as the subject. Semantically, these verbs describe processes that lack volitional control. Perlmutter proposed the 'unaccusative hypothesis' that recognizes a distinction between simple intransitive verbs which imply volitional control and those that do not. Some examples of each are given below:

simple intransitive	unaccusative/ergative
(5) We walk.	(7) The leaves fell.
(6) They sleep.	(8) The lake froze.

In the generative literature, Burzio (1981) and Keyser and Roeper (1984) have referred to the class of verbs in (7)-(8) as 'ergative' verbs. They are analyzed as subcategorizing for a single argument which bears the theme theta-role but no external argument (logical subject). Burzio's characterization of the ergatives is as follows:

> Ergative verbs refer to <u>all</u> verbs that appear in D-structure with a direct object, and with a non-thematic subject [i.e., without a subject theta-role]. (1981:45)

In principle, the subcategorized object of an ergative verb has the option of staying in the object position or moving to the subject position. This is visible on the surface in Italian:

(9) Arriva Giovanni.
arrives John

In English the object may only remain in-situ when the subject position is occupied by <u>there</u>:[2]

(10)a. There appeared a man.
b. A man appeared.

One important formal property of an ergative verb, Burzio claims, is that the base-generated object does not receive Case. Thus, movement of the object NP to the subject position is a legal option: it goes from a theta-marked but Caseless position to a non-theta-marked but Case-marked position; the Theta-Criterion is obeyed and the chain is assigned exactly one Case.

Note that the verb itself does not undergo any morphological change.

The class of ergatives can be subdivided into two groups, with different properties and hence consequences for learnability. One subclass of ergatives does not have a transitive/causative counterpart, the other does:

(I) ergatives without a transitive/causative counterpart:

(11)a. Something happened.
b. *They happened something.

(12)a. The guests arrived.
b. *The chauffeurs arrived the guests.

(13)a. The leaves fell.
b. *The wind fell the leaves.

Other examples include appear, arise, disappear, emerge and erupt, etc.

(II) ergatives with a transitive/causative counterpart:

(14)a. The ice melted.
b. The sun melted the ice.

(15)a. The ship sank.
b. The enemies sank the ship.

Other verbs that belong to this category include bounce, boil, break, close, dry, fracture, hang, move, open and roll.

Keyser & Roeper argue that ergatives are underlyingly transitive, i.e., the surface subject of ergatives originates as a deep structure object. The movement takes place in the lexicon, hence an ergative verb such as sink is assigned the following subcategorization frame:

sink: $[_S\ NP_i\ [_VP\ __\ t_i]]$

There is convincing evidence that 'all seemingly intransitive verbs are not created equal' (Baker 1983:1). One difference between simple intransitives and ergatives shows up in auxiliary selection for tense/aspect marking in Italian (v. Burzio 1981). The former select avere 'have' while the latter select essere 'be':

(16) Ha cantato Pavarotti.
Has sung Pavarotti
'Pavarotti has sung.'

(17) E uscito Pavarotti.
Is gone out Pavarotti
'Pavarotti has gone out.'

Interestingly, in view of the interlanguage passivization of ergatives, the auxiliary essere is also selected by the passive and the reflexive si construction, which has a passive interpretation. Indeed, in English too, there are similarities between ergatives and agentless passives and ergatives: i) on the surface both are intransitive, ii) both lack a logical subject and iii) the logical object appears in subject position. However, the two exhibit different syntactic behavior. The agentless passive is said to have an invisible 'implicit argument.' The optional by-phrase provides a syntactic diagnostic for its presence: the passive allows the by-phrase whereas the ergative does not (cf. 18b and 19b). Moreover, the implicit argument has the capacity to function as a syntactic controller: the passive allows control into the purpose clause whereas the ergative does not (cf. 18c and 19c).

passive

(18)a. The ship was sunk.
b. The ship was sunk by the enemy.
c. The ship was sunk to collect insurance.

ergative

(19)a. The ship sank.
b. *The ship sank by the enemy.
c. *The ship sank to collect insurance.

As Jaeggli (1986) argues, the passive morpheme absorbs the external theta-role (logical subject) and is crucial in the passive construction. When the by-phrase is present, the external theta-role is transmitted to it; when it is absent as in an agentless passive, the external theta-role is still present in the sense that it is absorbed by the passive morpheme: this explains why the passive allows control into the purpose clause, since there is an implicit argument in the passive which is absent in the ergative structure.

As the acquisition data show, learners seem to treat ergatives like passives. We shall argue that this tendency stems from the inherent similarities between the two structures: in both types of structure, an underlying object appears as surface subject. This similarity can be stated in both syntactic and semantic terms. Syntactically, the surface subject in both cases is the deep structure object; semantically, it bears the role of patient or theme (Jackendoff 1972). One question for the analysis of the interlanguage phenomenon, then, concerns the relative roles of the syntactic and semantic properties of ergative verbs.

3.2 Chinese Ergative Verbs

Chinese too have a class of verbs with properties similar to the English ergatives verbs. Li (1985) has analyzed Chinese verbs denoting presence, appearance and disappearance as ergatives. They include the following (p. 248):

a. Presence: you 'have,' zhan 'stand,' zuo 'sit,'
tang 'lie,' gua 'hang,' fang 'place,' etc.

b. Appearance: lai 'come,' chu 'come out,' qi 'emerge,'
xia 'fall,' jin 'enter,' dao 'arrive,'etc.

c. Disappearance: qu 'go,' si 'die,' pao 'run,'
tao 'escape,' guo 'pass,' etc.

Notice that as in Italian, the underlying object can appear in its deep structure position:

(20)a. Jintian lai le yige ren.
today come ASP oneCL man
'Today (there) came a man.'

b. Zhangsan lai le.
Zhangsan come ASP
'Zhangsan has come.'

Moreover, Chinese has those ergative verbs which have a transive/causative counterpart, parallel to the English ones in (14) - (15):

(21)a. Taiyang ronghua le xue.
sun melt ASP snow
'The sun melted the snow.'

(21)b. Xue ronghua le.
snow melt ASP
'The snow melted.'

Li claims that these Chinese verbs are like the English ergatives in that they do not assign subject theta-roles while unlike the English counterparts, they do assign accusative Case to the subcategorized object (v. Li 1985 for detailed arguments). The Chinese ergative verbs also have the option of staying in object position or moving to the subject position. The kind of movement involved is A-movement, i.e., movement from an argument position to another argument position. What is important for our purposes here is that the type of A-movement from object to subject position has instantiations in learners' L1.

The comparative study of the ergatives in English and Chinese shows that they involve similar processes, viz. A-movement from the object to the subject position. According to the Contrastive Analysis Hypothesis which predicts that if the L1 and L2 do not differ much with respect to a particular structure, learning should be facilitated, we would expect the target ergatives to present little problem since the native language also has similar structures derived by similar processes. On the contrary, as we shall see, the English ergatives seem to present persistent learning problems, even for advanced learners. Before turning to learnability considerations, however, we

need to examine the rationale for the IL structures more closely.

4. Interlanguage Ergatives

The passivized ergatives belong to the most challenging class of IL constructions: those which have no obvious source in either L1 or L2. Crucially, neither English nor Chinese allows the passivization of those ergatives without a transitive counterpart--the kind of structure found in the IL:

(22) *What was happened yesterday?

(23) *The leaves were fallen down.

(24) Sheme (*bei) fashen le?
What PASS happen ASP
*'What was happened?'

(25) Shuyeh (*bei) diaoxialai le.
leaf PASS fall down ASP
*'The leaves were fallen down.'

With respect to those ergatives with a transitive counterpart, while they undergo passivization productively in English, only a subset of these allow passivization in Chinese (see the general restrictive nature of passive in Chinese discussed in Li and Thompson 1976).

Note that the phenomenon is not specific to Chinglish. Zobl (1989) has noted the tendency of learners of various L1 backgrounds to subsume ergative verbs under the passive:

(26) The most memorable experience of my life <u>was happened</u> 15 years ago. (Arabic L1; advanced)

(27) Most people <u>are fallen</u> in love and marry with somebody. (Japanese L1; high intermediate)

(28) My mother <u>was died</u> when I was just a baby (Thai L1; high intermediate)

The fact that learners over-passivize reveals that they somehow interpret ergatives as underlyingly transitive (since only transitive verbs allow passivization in English).[3] The following are some oft-cited errors from the L1 literature illustrating the transitive/causative use of 'ergative' verbs: (cited in Bowerman 1983)

(29) C 4;2 He disappeared himself.
(30) J 6+ Do you want to see us disappear our heads? (Then, with a friend, she ducks down behind the couch.)
(31) E 3;0 Don't giggle me. (As father tickles her.)

L2 adult learners, like children, often turn ergative verbs into transitives/causatives. Some examples are cited in Rutherford (1987:89):

(32) The shortage of fuels occurred the need for economical engine.

(33) This construction will progress my country.

(34) Careless currency devaluation will go back us to old habits.

The transitive use of these ergative verbs in the IL shows that they subcategorize for an object, and hence can be freely passivized. Certain other ergative verbs, however, do not seem to be used transitively: these include happen and suffer. Moreover, suffer occurs in Chinglish with an object while remaining passive:

(35) She has been suffered the pain of tangled legs [i.e., bound feet].

This structure is exactly parallel to the Latin:

(36) Passus est dolorem.
SufferPERF-PASS pain-ACC
'He suffered pain.'

Such verbs in Latin are inherently passive, yet can take an object.[4] It seems that some verbs in Chinglish, like the corresponding class of verbs in

Latin and the English be born, are treated as inherently passive, i.e., listed in the lexicon as such rather than transformationally derived.

The question of lexical listing raises the general question of how the learner picks out individual verbs as members of the ergative class. As we noted earlier, the class can be identified by syntactic or semantic criteria. Ergative verbs in general, and specifically those which undergo passivization in Chinglish, belong to a narrow semantic class. We have found only the following verbs incorrectly passivized in our corpus:

Intransitive only: happen, die, suffer, occur, appear, vanish

Also transitive: change, grow, continue, increase/decrease, improve, derive, break

The single arguments of the first group of verbs are prototypical examples of the semantic role of **patient**: they denote affected entities with no control over the event. The fact that over-passivization only applies to this restricted class of predicates but not to other intransitive verbs might be taken as an argument for the semantic account of the phenomenon. The alternative, that syntactic properties of these verbs are responsible, begs the question of what evidence might identify them to the learner as a distinct class. The diagnostic properties invoked by syntacticians are **negative** in nature, e.g., the subjects of ergative verbs cannot control into a purpose clause (cf. 19c), and cannot form prepositional passives:

(37) This house was lived in by Mozart.
(38) *This house was died in by Mozart.

Yet all approaches to learnability assume that non-occurrence is at best a very weak clue to ungrammaticality. An analogous problem faces syntactic accounts of how children might learn which verbs can undergo Dative Shift (Pinker 1989).

5. Why are Ergative Constructions So Hard to Acquire?

It is no accident that ergatives present acquisition problems to most learners of English. In fact, learners' treatment of ergatives as if they were passives can be seen as a consequence of the typological organization of English, in which grammatical relations are based on the nominative-accusative system. The canonical mapping between theta-roles and grammatical relations in English is agent-subject, theme-object (v. Marantz 1984). The mapping of the agent theta-role to the subject of a transitive verb is the most preferred and productive mapping in English. Ergative verbs in English represent an exception to this mapping; Chinglish actually generalizes it at the expense of this exception, making English even more 'nominative-accusative' than it really is. Fillmore (1968) pointed out that when a theme surfaces in subject position, which is a 'non-normal' subject choice, as happens with the passive, the verb has special morphological marking to indicate the change in grammatical relations. Chinglish, by passivizing ergative verbs, is simply following this generalization to the letter.

Despite the many similarities that ergatives share with passives, they differ in one crucial respect: ergatives have no special morphological marking, but appear just like other simple intransitive verbs, which may well be a cross-linguistically marked phenomenon.[5] Since passive is very productive in English, it is plausible for learners to adopt the working hypothesis: whenever the object is in subject position, mark the verb with passive morphology. However, the class of ergative verbs constitutes an exception to the rule. These verbs do not require any special marking to indicate the change in grammatical relation whereby the theme argument is not in its canonical position. To master these verbs, the learner has to learn <u>not</u> to mark them. The fact that ergative verbs are not marked morphologically runs counter to the assumption of canonical mapping.

6. The Learnability Problem

The overgeneralization of passive to ergative verbs poses a challenging learnability problem. The problem is how might learners come to know the error of their ways without the benefit of negative evidence.[6] Two learnability principles, the Subset Principle (Berwick and Weinberg 1984) and the Uniqueness Principle (Pinker 1984), which are developed in the context of L1 acquisition are invoked below to shed light on the Chinglish phenomenon.[7]

The Subset Principle has the effect of constraining the ordering of learners' hypotheses such that they are protected from arriving at grammars from which they could only retreat via negative evidence. Since learning must proceed from positive evidence only, learners must start off with the narrowest possible hypothesis compatible with the available data. In case the hypothesis is too narrow (hence a subset), positive evidence in the input will suffice to inform the learner, who could then move on to a more general hypothesis (a superset). The problem arises when the learner starts with an overly general hypothesis. Recovery from this situation is predicted to be impossible in the absence of negative data since no positive evidence from the input would contradict the hypothesis.

The other major approach to learnability is associated with the notion of preemption based on the operation of the Uniqueness Principle. According to the Uniqueness Principle, deviant forms arising via productive mechanisms are preempted when an alternative realization of these forms in the input enters into competition and wins out; it is assumed that the learner resists having more than one entry for a semantic notion (e.g., in an inflectional paradigm). Preemption is invoked as a potential solution to the problems of overgeneration. The Subset and Uniqueness Principles are shown to be complementary in that the problems predicted by the former to be impossible can be overcome by preemption, for which the latter provides a possible mechanism.

Recall that ergative verbs can be divided into two subgroups: type I, those that do not have a transitive counterpart and type II, those that do. The overgeneralization of passive to the first subgroup, at least, creates a situation involving a subset-superset relation. The IL grammar generates a superset which includes both grammatical passives and ill-formed passives such as be happened, be fallen and be died. Thus the following subset-superset relation is obtained:

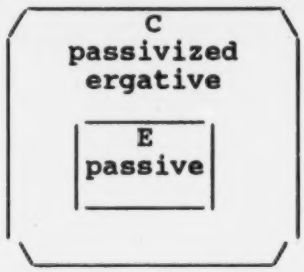

Figure 1. Passives and Ergatives (I)

C is the superset Chinglish grammar containing the incorrect passivized ergative verbs, which have to be preempted; E is the subset containing the correct forms in the target language.[8]

The learnability question that arises is: how do learners cut back from the superset to a restricted subset which is semantically and syntactically well-motivated? Put differently, how do the malformed passives drop out of the IL grammar? There is no positive evidence in the English input for the non-occurrence of these forms: they simply do not occur in the input. The learner would have to register the non-occurrence of such forms, which constitutes a very weak form of indirect negative evidence (cf. Pinker 1989). Hearing positive evidence exemplifying the ergative construction containing these verbs cannot reliably lead the learner to the conclusion that they do not undergo passive.

6.1 Expunging Passivised Ergatives

The problem of here is analogous to the situation involving the overgeneralization of dative movement to illegal verbs (cf. Pinker 1989). For the incorrect passivized forms to drop out from the grammar, the learner would have to notice the non-occurrence of these forms and induce their ungrammaticality. One potential solution to the learnability dilemma without resort to negative evidence is one that hinges on the operation of the Uniqueness Principle. The Uniqueness Principle has the function of mapping one form onto one meaning: when the grammar recognizes only one meaning, it is not assumed to map onto more than one form. For example, the learner who produces What was happened? also hears What has happened? in the input. Some learners, in fact, seem to use both forms interchangeably (39) or to waver between them (40):

(39) The world war III will be happened in the future. If we have SDI program, it will not only protect us but also save our lives even if the world war III happened. (advanced)

(40) From last year until now, politics have been changed rapidly.

Such learners clearly allow two forms to coexist, perhaps in competition. It may take some time for the learner to decide between them (in the case of happen) or to distinguish the transitive and ergative readings of change. For preemption to occur, first, the two forms have to be interpreted as encoding the same meaning; then the Uniqueness Principle may operate to question the assumption that both are possible alternatives, leading the learner to choose between the two forms. The version exemplified in the input will have to exert priority over the incorrect form, resulting in its preemption.[9,10]

This situation is predicted by the Subset Principle alone to be difficult in the absence of negative evidence. However, in conjunction with the Uniqueness Principle, the learnability problem can in principle be overcome. Here we have a case exemplifying

how these two learnability principles can efficiently complement each other in illuminating L2 phenomena.

6.2 Acquisition of Ergatives With Transitive Counterpart

This second subgroup of ergatives pose a different problem: their transitive counterpart will always allow passivization. Here are some more examples of ergative verbs with a transitive counterpart:

(41)a. The window broke.
b. The window was broken.

(42)a. What cooks most quickly?
b. What can be cooked most quickly?

In this case, the difficulty lies in recognizing the distinction between the passive and the ergative construction. Learners do not seem to make a distinction between the passivized transitive verb and the ergative verb but collapse the two. Here the question is **not** that the learner has to expunge certain deviant forms from the grammar; what needs to be learned is the distinction between the passive and the ergative constructions.

According to the Uniqueness Principle which states that each function gets a distinct encoding, only when the learner perceives a difference in function will he mark a form distinctively. Given the subtle semantic distinctions between the two as discussed earlier, what might motivate learners to isolate the class of ergatives and encode them in a different way from the passive? The logical requirement of a causal agent seems to favor overwhelmingly the passive representation. Insofar as the two structures share the function of putting a theme argument in subject position, Uniqueness impedes the acquisition of the ergative version. As long as the learner does not differentiate functionally between the two, there is no motivation for mapping the semantics of ergatives onto a separate form.

One solution might involve the first class of ergatives, those without transitive counterparts, e.g.,

happen. We argued above that preemption can operate in relatively straightforward fashion to replace the passivized forms by the target ergatives. Once this has occurred, one class of ergatives has been admitted into the grammar, paving the way for further verbs to join it. The ergative versions of the second class of verbs, e.g., break could then enter the grammar on the basis of the first class. This, of course, makes predictions about developmental stages: learners should begin using the first class correctly before they acquire the second class, or alternatively, the two might be acquired simultaneously. Thus, certain learners might be found to have acquired the first class but not the second. We are not aware of any evidence bearing on this prediction, and it certainly awaits further investigation.

Whether or not the first class of verbs does play such a key role, the learnability situation appears more favorable when formulated in subset terms:

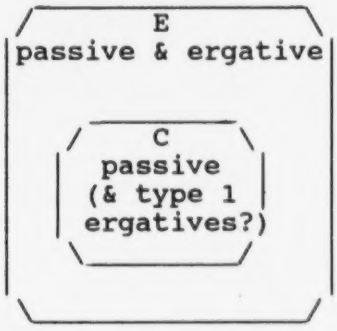

Figure 2. Passives and Ergatives (II)

C is the Chinglish grammar generating passives but few or no ergatives; E is the English grammar generating both passives and ergatives. Since C is the subset, acquisition can proceed in the absence of negative evidence. The learner only has to hear the ergatives in the input, assign the correct analysis and incorporate them into the grammar. However, learners typically undergenerate ergatives and seem reluctant to expand their linguistic repertoire to include them. The key to understanding this dilemma lies in the

insight provided by the Uniqueness Principle as discussed above. Again, the two principles of learnability theory work together to illuminate the problems involved.

One goal of learnability theory is to account for which phenomena are susceptible to fossilization. One way of characterizing fossilization is that preemption fails to happen. Some L2 learners are bound to continue producing these fossilized errors despite the availability of the relevant input. Such failure of preemption is quite as interesting as its successful operation. While the input is the major determinant of success or failure of preemption, it is by no means the only one: here learner-related variables become significant. A logical prerequisite for preemption to occur is that the learner register a difference in form between the target structure and the one created by IL productive mechanisms. Thus a learner has to pay attention to form and if two forms are noted to encode the same meaning, the Uniqueness Principle will operate accordingly. From our discussion of the phenomena in question, it can be seen that both principles play a role in making learnability predictions: their interaction yields a fuller picture of the learnability situation. For example, in the acquisition of two types of ergative verbs, the predictions of Subset Principle alone would still leave us with an incomplete understanding of the situation. With the insight of the Uniqueness Principle, we see something more:

(i) Regarding the first type of ergative verbs (without a transitive counterpart), the Subset Principle alone predicts the situation to be difficult without negative evidence; the Uniqueness Principle provides a solution whereby the incorrect passivized version can be preempted by the correct ergative version.

(ii) Regarding the second type of ergative verbs (with a transitive counterpart), the Subset Principle predicts acquisition to be easier as positive evidence motivates the widening of the subset to include the ergatives. However, the apparent delay in acquisition may be accounted for by the Uniqueness Principle: the

ergative version and the passive version of their transitive counterparts are collapsed as one undifferentiated meaning, which is mapped onto a single form, viz., the passive. Thus acquisition of these ergative verbs is not as straightforward as the Subset Principle alone predicts. Insofar as the functions of ergative and passive are perceived to be the same, the Uniqueness Principle predicts acquisition of these verbs to be difficult.

7. Conclusion

We have brought current theoretical analyses of ergatives in English and Chinese to bear on the over-passivization of ergatives in Chinglish. The English ergative seems to be a cross-linguistically marked construction in that there is no special morphology to mark it. Learners prefer to mark the verb overtly to indicate the change in grammatical relation--the theme occurring in the subject position. This class of interlanguage constructions reflects a universal tendency which does not derive directly from either L1 or L2. Interlanguage grammar often 'creates' structures that seem natural or follow universal tendencies, and the Chinglish treatment of ergatives provides a case in point. However, the passivization of ergatives is well-motivated in that it brings them into line with the canonical mapping in English, viz. the semantic role of theme to the object position, with deviations from this being overtly marked. The error thus involves a complex interaction of syntax and semantics.

We have also examined the overgeneration of passivized ergatives in Chinglish in terms of our two learnability principles. Ergatives fall into two classes: those without a transitive counterpart and those with a transitive counterpart. The problem with over-passivizing the first type is that these ungrammatical passives have to drop out of the interlanguage grammar. According to the Uniqueness Principle, when the learner hears the correct ergative version in the input, he will have to choose between the interlanguage form and that exemplified in the input, since one form is assumed to map onto one

meaning. Preemption of the erroneous passivized ergatives can thus occur.

The other type of ergatives are those whose transitive counterpart can indeed be passivized provided the agent is intended. The problem is that the ergative version is difficult to acquire since every time the learner uses such a verb, with the theme argument in the subject position, the verb automatically receives passive morphology. The learner prefers to collapse what the target language treats as two categories into a single category--a tendency predicted by Uniqueness. The semantic distinctions between the ergative and transitive versions appear to be too subtle for the L2 learner whose semantic space has been partitioned by the categories of his L1. Thus the learnability situation, as well as the phenomenon itself, involves the interaction of syntactic and semantic factors.

Notes

1. The English interlanguage produced by Chinese learners of English is termed 'Chinglish,' which is intended to be a neutral, descriptive term, capturing properties arising from the interaction of two linguistic systems, viz., L1 Chinese and L2 English.

2. We assume, following the generative literature, that the post-verbal position in the existential construction is the object position.

3. Learners' subsuming ergatives under passives could be taken as further empirical evidence in support of the generative type of analysis, viz. the NP-argument of ergatives originates as the underlying object.

4. This observation is due to Stephen Matthews. Note that passive constructions can also take an object in Chinese, e.g., ta bei qiang le qian 'he was robbed (of) money.' This could be a contributing factor in the Chinglish phenomenon, although the structure corresponding to (35) is impossible in Chinese because the happen type of ergative verb cannot be passivized.

5. Languages use various devices, such as reflexive morphemes in Romance and vowel alternations in Germanic, to encode the transitive and ergative verbs differently, e.g.,

French:	se briser (erg.)	'break'--reflexive
	briser (transitive)	
German:	sinken (erg.)	'sink'--vowel alternation
	senken (transitive)	

English preserves only relics of such an alternation as in fall/fell, drink/drench and sing/sinch (I am indebted to Bill Rutherford for this learned example). It is doubtful whether these pairs are synchronically related.

6. The role of negative evidence in adult L2 acquisition is a controversial issue. The critical question remains: is negative evidence necessary or useful in motivating reanalysis of structures? (v. Schwartz 1987 and White 1988 for different views). For our purposes, we will assume that even without negative evidence, learners are able to recover from over-generation.

7. Yip (1989) argues that the goals of learnability theory in L1 and L2 are partially distinct and suggests that the same principles developed in the L1 context be adapted to offer insights into the learnability problems given rise by transfer and creative construction in L2.

8. The diagram simplifies the situation for ease of exposition. Chinglish will continue to undergenerate passive constructions of certain types, including the following:

i. 'get' passives, e.g., He got beaten up.
ii. stative predicates, e.g., The company is owned by a crook.
iii. complex predicates, e.g., He is thought to be cheating.
iv. nominalizations, e.g., The review of her book by Chomsky

9. In first language acquisition, input data are assumed to take priority because of the provisional status of forms produced by productive mechanisms (cf. Pinker 1984). As long as the IL remains permeable, i.e., short of fossilization, similar considerations apply in L2 acquisition. However, as the IL becomes fossilized, these forms may lose their provisional status and become impervious to preemption.

10. There is nothing that would force the learner to assume that happen has only one subcategorization entry, i.e., realized as an ergative verb. In fact, one student informed us that he thought happen could be passivized, i.e., it is transitive as well. As long as the learner 'creates' a separate meaning, e.g., 'cause to happen' corresponding to be happened, Uniqueness would predict the transitive/causative version to persist. Thus no obvious factor seems available that would dictate the learner's expectation of a unique entry for the happen type of ergative verbs.

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Appendix Examples of Passivized Ergatives

Subjects: students are from Taiwan and examples drawn from written compositions or oral reports. Subjects are aged 18-30, mostly in their mid-twenties.

201 = High intermediate ESL for science & technology
202 S & T = Advanced ESL for science & technology
262 = Argumentation course for business students (post-202)

I do not think that such abusive action should be happened to a twelve-year old child. (SH, 262)

Rush-hour traffic can be vanished because working at home is a new version. (BFW, 202 S & T)

Our life style will be greatly changed in the recent future when computers are combined intelligently with other scientific techniques. (BFW, 202 S & T)

Our offspring will be suffered because we neglect the environment pollution. (BFW, 202 S & T)

She has been suffered the pain of tangled legs... and pleased her new marriage. (BFW, 202 S & T)

People are suffered by the death.(BFW, 202 S & T)

The electrical energy and convey electricity will be sharply changed in the future. (CCC, 202 S & T)

The World War III will be happened in the future. If we have SDI program, it will not only protect us but also save our lives even if the World War III happened. (PH, 202 S & T)

It means we do not have any chance to test this X-ray laser until a war is happened. (AH, 202 S & T)

For last 15 years computers have drastically affected our life and this will be continued in the future. (AH, 202 S & T)

Immigration and the other difficult problems will be appeared. (YH, 202)

From last year till now, the politics and economy have been changed rapidly. (PSH, 202)

Things have changed, but the crux is that what people in Taiwan think about is changed. (YWC, 202)

Overcrowding and crimes are derived from same source. The population of LA was rapidly grown these years. (AW, 202 S & T)

Not all of the cars run out in the same time, the condition of traffic will be improved. (JJ, 202 S & T)

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VOWEL DEVOICING IN SHANGHAI

Eric Zee
Department of Anthropology
CUHK

1. INTRODUCTION

It is well documented that high, closed vowels [i, u] devoice more frequently than low vowels (Greenberg 1966, Jaeger 1978). According to the Stanford Phonology Archive, there are at least 44 languages which have devoiced vowels. The Japanese vowel devoicing seems to have received most attention (Block 1950, Martin, 1952, Shitaba 1955, Kindaichi 1958, Han 1962a, 1962b, McCawley 1968, Sawashima 1969, 1971, Kawakami 1970, Hirose 1971, Ohso 1973, Lovins 1976, Beckman and Shoji 1983). In a detailed analysis of the Japanese phonemics, Block (1950) observes that in Japanese the high, close vowels [i, u] become devoiced when preceded and followed by voiceless consonants and for the non-high vowels the process of devoicing occurs in rapid speech only. Han (1962), using a sound spectrograph, investigates phonetic conditions for the high, closed vowels [i, u] to devoice in Japanese, and concludes that (1) the high, closed vowels [i, u] are more ready than other non-high vowels to devoice as they are inherently shorter than [e, a, o]; (2) [i, u] are more ready to devoice in rapid speech, (3) in a high-pitched syllable and in normal speech rate, vowels [i, u] do not devoice, (4) [i, u] devoice only when preceded and followed by voiceless consonants, (5) vowel devoicing is not likely to occur in two successive syllables. Thus, inherent vowel duration, speech rate, pitch, and consonant environment are determining factors for vowel devoicing. Ohala (1975) suggests that compared to an open vowel, a high, closed vowel, following a voiceless aspirated stop, causes (1) a greater oral pressure and thus a lower trans-glottal pressure, the effect of which is to inhibit voicing, and (2) increased oral air velocity, the effect of which is to produce greater frication. Thus, "high, closed vowels more frequently become devoiced and/or fricated than low, open vowels" (Ohala 1975 p.102). By measuring the lowest-frequency spectral prominences of the fricative [S] in the Japanese syllables [Si] (/si/) and [Su] (/syu/), Beckman and Shoji (1983) show that there is a spectral coloring of the fricative [S] by the following vowel. In the subsequent perceptual experiments of devoiced /si/ and /syu/, using both real speech and synthetic test tokens, they conclude that the Japanese subjects use the coloring of the fricative as a cue to identify the intended underlying vowel /i/ or /u/.

The present paper is a phonetic study of vowel devoicing in a tone language. The language under investigation is Shanghai, a Chinese dialect spoken mainly in the city of Shanghai. The paper explores the phonetic conditions under which the high, closed vowels [i, u] and the apical vowel [ɿ] in Shanghai are most likely to become devoiced. The phonetic conditions may be segmental as well as suprasegmental. Segmentally, the study seeks to determine whether a certain type of pre-vocalic consonant is more likely to cause the following vowel to devoice. Suprasegmentally, the study seeks to determine whether a certain tone category is more likely to cause the vowel to devoice. It also investigates whether the position of the syllable in a

polysyllabic compound constitutes a conditioning factor for a vowel to devoice. It further investigates whether the rate of speech has an effect on vowel devoicing.

2. METHOD

In the Shanghai dialect, there are five citation tones, of which three [HL, MM, LM^] ("^" meaning "raised") occur on open, long monosyllables and two [M^, LM] on checked, short monosyllables. However, in a bisyllabic or polysyllabic compound, each syllable receives a phonetic tone which may be high [H], mid [M], raised mid [M^], raised low [L^], low [L], or low-rising [R] (= [LM]). These phonetic tones constitute the tone patterns on the Shanghai compounds. There is a fixed number of phonetic tone patterns on the compounds and they are shown below:

Bisyllables	Trisyllables	Quadrisyllables
[H L]	[H M L]	[H M L^ L]
[M M^]	[M H L]	[M H M L]
[L M^]	[L H L]	[L H M L]
[L R]	[L L R]	[L L L R]

(after Zee 1988; cf. Zee & Maddieson, 1980)

The test syllables used in the study are [sɻ] ("[ɻ]" being an apical vowel), [ʂi], [tsɻ], [tsʰɻ], [tʂi], [tʂʰi], [fu], and [hu]. Each syllable is a meaningful monosyllabic word and each may form meaningful compounds with other syllables. The corpus of data used for investigation includes bisyllabic, trisyllabic, and quadrisyllabic compounds as listed in Tables (I) - (V). Tables (I) and (II) show the bisyllabic, trisyllabic, and quadrisyllabic compounds which contain the test syllables [sɻ] and [ʂi], respectively. Tables (III), (IV) and (V) show the quadrisyllabic compounds which contain the test syllables [tsɻ] and [tsʰɻ], [tʂi] and [tʂʰi], and [fu] and [hu], respectively. Also shown in each table are the phonetic tone patterns on the compounds. The tone in square brackets is the phonetic tone realized on the test syllable, and "DEV" indicates that the vowel in the test syllable is devoiced.

The phonetic data was elicited from a male native Shanghai speaker who recently came from Shanghai to study at the Chinese University of Hong Kong. He is in his late twenties and has no history of speech or hearing difficulty. His speech was judged by other native Shanghai speakers also in their late twenties as standard metropolitan Shanghai spoken by the younger generation. The speaker read the word lists containing the compounds shown in Tables (I-V) at two different speech rates, normal and fast. One of the criteria for selecting the compounds was that they should be common and regularly used in everyday conversations. The recording was performed in a quiet room the recorded data were analysed, using a digital sound spectrograph (Kay 7800 Digital Sonagraph). Wide band spectrograms of each compound uttered in two speech rates, normal and fast, were made. Thus, a total of 228 spectrograms (114 compounds x 2 speech rates) was made.

3. RESULTS

The results of the spectrographic analysis of the compounds are shown also in Tables (I-V). Table I shows the result for the bisyllabic, trisyllabic and quadrisyllabic compounds which contain the test syllable [sɻ]. As shown, in all the bisyllabic compounds, there is only one case of vowel devoicing, indicated by "DEV", in which the apical vowel [ɻ] in the compound [$k^hEsɻ$] [HL] "boiled water" is devoiced. Notice, however, that (a) the devoicing occurs only in fast speech, (b) the syllable which contains the devoiced vowel receives a [L] tone, and (c) the vowel occurs in the compound-final position. Fig. (1) shows two wide-band spectrograms of the compound. The one on the left is the spectrogram of the the compound uttered at normal rate of speech and the one on the right is at fast speech rate. The duration of the compound at the normal rate of speech is approximately 0.472 sec. and in fast speech 0.379 sec. The temporal organizations of the compound uttered in two different speech rates are shown below:

[$k^hEsɻ$] [HL] "boiled water":

	Normal	Fast	Duration Reduced (%)
[$k^hEsɻ$]	0.472 sec.	0.379 sec.	19.7%
[k^hE]	0.308 sec.	0.267 sec.	13.7%
[sɻ]	0.267 sec.	0.236 sec.	11.6%
[s]	0.215 sec.	0.267 sec.	-24.2%
[ɻ]	0.082 sec.	0.000 sec.	100.0%

Interestingly, the duration of the frication of [s] in [sɻ] is increased in fast speech by approximately 24.2%. This would seem to be opposite to what is expected to occur since in fast speech the total duration of the compound and that of the test syllable [sɻ] are reduced by 19.7% and 11.6%, respectively. However, it merely implies that a final portion of the frication of [s] in fast speech is really the devoiced vowel segment. In Fig. (1) we can see that the voicing striations near the baseline immediately after the noise energy of [s] on the left (normal speech rate) disappear from the spectrogram on the right (fast speech rate). This indicates that the apical vowel [ɻ] in the test syllable is devoiced when uttered in fast speech. However, as shown in Table (I), the same vowel which receives a [H], [M] or [R] tone does not undergo the same devoicing process, even if it is uttered at fast speech rate and at the same time occurs in the compound-final position. The spectrograms of [sɻku] [MMˆ] "fruit" (Fig. 2) show that the vowel [ɻ] in the same test syllable which occurs in the compound-initial position is not devoiced, as we can see the voicing striations of [ɻ] in the test syllable are present at both speech rates, and this is also true for [$k^hɔsɻ$] [MMˆ] "examination" (Fig. 3). In both cases, the test syllable receives a [M] or [Mˆ] tone.

As for the trisyllabic compounds, there is a substantial increase in the number of the devoicing cases at both speech rates (Table (I)),

although the vowel in the test syllable which receives a [H] or [R] tone is still not devoiced under any conditions. However, there are devoicing cases associated with the test syllable which receives a [M] tone, and the vowel [ɻ̥] is devoiced at both speech rates if the test syllable is not in the compound-initial position. If, however, the test syllable occurs in the compound-initial position, as shown in the spectrograms of [sɻ̥kut^{h}E] [MHL] "fruit stalls" (Fig. 4), the vowel [ɻ̥] is not devoiced, irrespective of speech rate, although, as we can see, the spectrographic marking of the voicing striations of [ɻ̥] in fast speech is very much reduced.

In the case where the test syllable receives a [L] tone the apical vowel [ɻ̥] is devoiced at both speech rates only if the test syllable does not occur in the compound-initial position, as shown in the spectrograms of the compound [sɻ̥lEsɻ̥] [LHL] "tap water" (Fig. 5), whereas the same vowel in the compound-initial syllable is not, irrespective of speech rate. The temporal organizations of the compound uttered in two different rates of speech are shown below:

[sɻ̥lEsɻ̥] [LHL] "tap water":

	Normal	Fast	Duration Reduced (%)
[sɻ̥lEsɻ̥]	0.718 sec.	0.568 sec.	21.0%
[sɻ̥]	0.256 sec.	0.174 sec.	32.0%
[lE]	0.256 sec.	0.205 sec.	20.0%
[sɻ̥]	0.297 sec.	0.267 sec.	10.0%

The pattern of the devoicing of the apical vowel [ɻ̥] in the quadrisyllable compounds is similar to that in the trisyllabic compounds. Again, as in the case of the trisyllables, the vowel is not devoiced, irrespective of speech rate, if the test syllable receives a [H] or [R] tone. The vowel becomes devoiced at both speech rates, however, if the test syllable receives a [M] tone (or, a [Lˆ] tone) and does not occur in the compound-initial position, as shown in the spectrograms of the compound [tIkosɻ̥fɑ] [MHML] "square" (Fig. 6). The vowel is also devoiced at both speech rates if the test syllable receives a [L] tone and occurs either in the compound-final position, as shown in the spectrograms of [fEgasosɻ̥] [HMLˆL] "ketchup" (Fig. 7), or penultimate position as in the case of the compound [sɐlosɻ̥ɪi] "16th Century" which has a tone pattern of [LLLR]. The temporal organizations of the quadrisyllabic compound [fEgasosɻ̥] [HMLˆL] "ketchup" uttered in two different speech rates are shown below. Interestingly, the duration of the syllable [ga] is almost unaffected when the compound is uttered in fast speech:

[fEgasosɻ̥] [HMLˆL] "ketchup":

	Normal	Fast	Duration Reduced (%)
[fEgasosɻ̥]	0.743 sec.	0.625 sec.	15.9%
[fE]	0.195 sec.	0.164 sec.	16.0%
[ga]	0.108 sec.	0.103 sec.	0.04%
[so]	0.185 sec.	0.164 sec	11.4%
[sɻ̥]	0.267 sec.	0.215 sec.	19.5%

Here, it should be pointed out that in Shanghai the test syllable in the initial position of a compound which receives a phonetic tone pattern of [LR], [LLR], or [LLLR], is always a checked syllable, [CV?] (although the syllable-final glottal stop is deleted when it is followed by a segment of any type), which does not contain a high closed tense vowel, [i] or [u], or an apical vowel [ɿ]. Therefore, a syllable in this context does not constitute a test syllable.

Table (II) shows the vowel devoicing cases in the bisyllabic, trisyllabic, and quadrisyllabic compounds which contain the test syllable [ɕi]. Compared to the test syllable [sɿ] (Table (I)), we can see that in both normal and fast speech there is (a) no change in the number of devoicing cases associated with the bisyllabic compounds, (b) a substantial reduction with the trisyllabic compounds, and (c) a reduction of three cases associated with the quadrisyllabic compounds. The spectrograms of [ɕʔɕi] [HL] "fresh" (Fig. 8) show the only vowel devoicing case associated with the bisyllables. We can see the vowel is devoiced only when the compound is uttered in fast speech. As for the trisyllabic compounds, the vowel [i] is only devoiced at both speech rates if the test syllable occurs in a compound-final position and receives a [L] tone, and if the tone pattern on the compound is [HML]. Fig. 9 shows the spectrograms of the compound [ɕiõlEɕi̥] [HML] "kind of fierce", in which the vowel [i] is devoiced at both speech rates. However, if the tone pattern on the compound is other than [HML], then the vowel [i] is devoiced only in fast speech, as shown in the spectrograms of the compound [ɕiɔlEɕi] [MHL] "kind of small" (Fig. 10).

Compared to the trisyllabic compounds, there is an increase in the number of devoicing cases in the quadrisyllabic compounds which contain the test syllable [ɕi]. We can see that the vowel [i] is devoiced at both speech rates if the test syllable receives a [L] tone and occurs in the compound-final position, as shown in the spectrograms of [lɔkalEɕi̥] [LHML] "kind of boastful" (Fig. 11), or if the test syllable receives a [M] or [Lˊ] tone and occurs in a penultimate syllable, as shown in the spectrograms of the compound [sEtõɕik^{w}o] [HMLˊL] "Shandong watermelons" (Fig. 12). The vowel is also devoiced in fast speech when it occurs in the penultimate syllable of a compound which has a tone pattern of [LLLR].

Comparing Table (I) with Table (II), we notice that in the trisyllabic compounds and quadrisyllabic compounds the apical vowel [ɿ] (Table II) is more devoiceable when preceded by an alveolar fricative [s] than the vowel [i] (Table II) when preceded by an alveolo-palatal fricative [ɕ]. We, however, will not be able to determine whether the vowel [i] is just as devoiceable if it is preceded by [s], or whether the apical vowel [ɿ] is less devoiceable if it is preceded by [ɕ], since in Shanghai the vowels [ɿ] in [sɿ] and [i] in [ɕi] occur in complementary distribution.

Table (III) shows the vowel devoicing cases in the quadrisyllabic compounds which contain the test syllables [tsɿ] or [ts^{h}ɿ]. We can see that there are a greater number of devoicing cases associated with the test syllable [ts^{h}ɿ] than with [tsɿ]. In fact, compared to all the other test syllables in the quadrisyllabic compounds (Tables, I,

II, IV, and V), the apical vowel [ɻ] when preceded by a voiceless aspirated alveolar affricate [ts^{h}] has the highest devoiceablity (see also Table VI). Fig. (13) and Fig. (14) show the spectrograms of the compounds [tʂʏtsɻtili] [HML$^{\wedge}$L] "in a gold shop" and [fɔ̃ts^{h}ɻtɑ̃tʂɪʔ] [HML$^{\wedge}$L] "satirical attack", respectively. We can see in both cases the apical vowel [ɻ] in the test syllable which occurs in the second position of the compound and receives a [M] tone is not devoiced at normal speech rate, however, the vowel becomes devoiced at fast speech rate only when it is preceded by an aspirated alveolor affricate [ts^{h}]. Notice in Fig. (14) that the lax high front vowel [I] in the compound-final syllable [tʂIʔ] which receives a [L] tone is not devoiced at either speech rate. This seems to be contrary to what is expected, since its tense counterpart, [i], is almost always devoiced in the trisyllabic or quadrisyllabic compounds at both speech rates (Tables II, IV, and VI) when the test syllable receives a [L] tone and occurs in the compound-final position. It only indicates that the tense and lax high front vowels behave differently in the process of vowel devoicing. Notice in Table (III) that, in the quadrisyllabic compounds which contain the test syllable [ts^{h}ɻ] and which have a rising tonal pattern of [LLLR], the vowel [ɻ] in the second, or penultimate syllable is devoiced at both speech rates. These in fact are the only cases where a vowel in the compound with such a tone pattern may become devoiced at both speech rates (cf. Tables I, II, IV & V). Fig. (15) shows the spectrograms of the compound [modʏts^{h}ɻtɔ] [LLLR] "wooden bayonets". We can see that the vowel [ɻ] in the test syllable [ts^{h}ɻ] which receives a [L] tone and which is in the penultimate position is devoiced at both speech rates.

Table (IV) shows the vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [tʂi] or [tʂ^{h}i]. Similar to the test syllable [tsɻ] or [ts^{h}ɻ] (Table (III)), there are more cases of devoicing of [i] when it is preceded by an aspirated alveolo-palatal affricate than when it is preceded by an unaspirated counterpart. Fig. (16) shows the spectrograms of the compound [ʂĭvɔ̃tʂitsɔ] [HML$^{\wedge}$L] "a news reporter", uttered at two speech rates. We can see the vowel [i] in [tʂi] which receives a [L$^{\wedge}$] tone is devoiced only in fast speech. However, as we can see in the spectrograms of the compound [sEsɻ tʂ^{h}i̥k^{wh}E] [HML$^{\wedge}$L] "some three or four thousand dollars" (Fig. (17)) the vowel [i] in the penultimate syllable which receives the same [M] tone is devoiced at both speech rates.

Table (V) shows the vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [fu] or [hu]. We can see the number of vowel devoicing cases is greatly reduced, compared to the high front vowel [i] or apical vowel [ɻ] (Tables I, II, III, and IV). There are only five devoicing cases associated with the test syllable [fu] and four with the test syllable [hu], while in the case of [hu] the vowel [u] never undergoes vowel devoicing at the normal rate of speech. There are only two cases where the vowel [u] becomes devoiced at both rates of speech. In both cases, the devoiced [u] occurs in a compound-final syllable which receives a [L] tone. One of them is shown in the spectrograms of the compound [molʏk^{h}ufu̥] [LHML] "Malinkov (a Russian name)" (Fig. (18)). Compared to the vowel [i], [u] or [ɻ] in the other test syllables, the vowel [u] in the test syllable [hu] is the only case where a vowel does not undergo vowel

devoicing when the test syllable occurs in compound-final position and at the same time receives a [L] tone. This is shown in the spectrograms of the compound [ɕiɔzɻlEhu] [MHML] "small matches" (Fig. (19). Since we have not used test syllables such as [su], [tsu], [tsʰu] or [fi] which are all meaningful monosyllables in the language, we at this time cannot be certain whether the high back vowel [u] is inherently more resistant to vowel devoicing, or whether the small number of devoicing cases is due to conditioning by the syllable-initial consonant type, [f] or [h]. Similarly, we are not certain whether the relatively greater number of devoicing cases of the high front vowel [i] is as a result of the vowel being inherently more devoiceable, or due to conditioning by the syllable-initial consonant, [ɕ], [tɕ], or [tɕʰ]. Thus, additional test syllables to verify this should be included in a future study.

The vowel devoicing cases in the Shanghai quadrisyllabic compounds are summarized in Table VI. The table shows the pattern of the distribution of devoicing cases. Based on Table VI, we reach the following generalizations with regard to the conditions under which a high closed vowel [i] or [u], or an apical vowel [ɻ] may undergo vowel devoicing in a quadrisyllabic compound in Shanghai:

(1) If the test syllable receives a [H] or [R] tone, then the high vowels, [i] and [u], and the apical vowel [ɻ], do not undergo vowel devoicing, irrespective of the rate of speech or the position of the test syllable in the compound.

(2) If the test syllable occurs in the compound-initial position, then the high vowels, [i] and [u], and apical vowel [ɻ] do not undergo the process of vowel devoicing, whether the test syllable receives a [H] or a [M] tone. This is also true for the vowels in the bisyllabic as well as trisyllabic compounds (Tables I & II). (*Notice that in our study the compound-initial [L] tone has not been studied systematically. The only tested cases where a [L] occurs on a compound-initial position are the trisyllabic compound, [sɻ̥lEsɻ] [LHL] "tap water" (Fig. 4; Table I) and quadrisyllabic compound, [sɻ̥bEtɕʰitsʰo] [LHML] "a private car" (Fig. 20; Table IV). In either case, the apical vowel in the compound-initial syllable which receives a [L] tone is not devoiced at either speech rate. We have yet to test the apical vowel as well as the high vowels [i] and [u], preceded by different types of consonant, in the same morphological and suprasegmental environments in order for any generalizations to be made.*)

(3) If the test syllable receives a [M] tone and occurs in the penultimate position of a quadrisyllabic compound which has a tone pattern of [M/LHML], then (i) the vowel [i] and apical vowel [ɻ] in [ɕi] and [tsʰɻ], respectively, are devoiced at both speech rates, (ii) the vowels [i], [u] and apical vowel [ɻ] in [tɕʰi], [hu] and [tsɻ], respectively, are devoiced only at fast speech rate, and (iii) the vowels [i] and [u] in [tɕi] and [fu], respectively, are not devoiced.

(4) If the test syllable receives a [M] tone and occurs in the second position of a quadrisyllabic compound which has a

tone pattern of [HML^L], then (i) only the vowels [i] and [ɻ] in [tɕʰi] and [tsʰɻ], respectively, are devoiced, and then only at normal speech rate, and (ii) the vowels in other test syllables are not devoiced, irrespective of speech rate.

(5) If the test syllable receives a [L^] tone and occurs in the penultimate position of a quadrisyllabic compound which has a tone pattern of [HML^L] or [M/LHML], then (i) the vowel [i] in [ɕi] and [tɕhi] as well as vowel [ɻ] in [sɻ] and [tsʰɻ] are devoiced at both speech rates, and (ii) the vowels [i] in [tɕi], [ɻ] in[tsɻ], and [u] in [fu] and [hu] are also devoiced, but only at fast speech rate.

(6) If the test syllable receives a [L] tone and occurs in the second position of a quadrisyllabic compound which has a tone pattern of [LLLR], then (i) the high vowel [i] in [tɕʰi] is devoiced only at fast speech rate, (ii) the apical vowel in [tsʰɻ] is devoiced at both speech rates, and (iii) the vowels [i], [ɻ] and [u] in the rest of the test syllables are not devoiced. However, if the test syllable occurs in the penultimate position of a quadrisyllabic compound which has the same tone pattern, then (i) the apical vowel [ɻ] in [sɻ] and [tsʰɻ] is devoiced at both speech rates, (ii) the apical vowels [ɻ] in [tsɻ] and [i] in [ɕi] and [tɕʰi] are devoiced only at fast speech rate, and (iii) the vowel [u] in [fu] and [hu] as well as [i] in [tɕi] are not devoiced, irrespective of the speech rate.

4. CONCLUSION

To conclude, we have demonstrated with spectrographic evidence that (i) the process of devoicing of the high closed vowels [i] and [u] or apical vowel [ɻ] in the Shanghai dialect is subject to a number of phonetic conditioning factors: (a) the consonant type that precedes the vowel; (b) the phonetic tone on the test syllable in a compound; (c) the phonetic tone pattern on a compound; (d) the positioning of the test syllable in a compound, and (e) the rate of speech; (ii) the apical vowel [ɻ] has the highest devoiceability, followed by [i] and then [u]; however, it is not clear at this time whether [ɻ] is inherently the most devoiceable vowel or whether its high devoiceability is due to the consonant type that precedes it; (iii) the descending order of the devoiceablity of the different test syllables is: [tsʰɻ], [sɻ], [tɕʰi], [ɕi], [fu], and [hu]; (iv) a vowel occurring in a test syllable which receives a [L] tone is most likely to undergo devoicing process; (v) a vowel which is uttered in fast speech is more likely to undergo the process of devoicing; (vi) if a vowel is devoiced at normal speech rate it must also be devoiced at fast speech rate while the reverse is not true; (vii) there is a tendency for a vowel to become more devoiceable as the number of the syllable increases in a compound; (viii) the *Optimal Condition* for a vowel to become devoiced is when the test syllable occurs in the compound-final position and at the same time receives a [L] tone; and (ix) the *Least Favorable Conditions* for a vowel to become devoiced are (a) when the test syllable receives a [H] or [R] tone, and (b) when the test syllable occurs in the compound-initial position, irrespective of the tone it receives.

[End]

COMPOUND			TONE PATTERN	SPEECH RATE NORMAL	FAST
Bisyllables containing [s̩]:					
[sl̩ti]	[書]店	"a bookstore"	[H]L		
[kʰɔsl̩]	考[試]	"examination"	M[M^]		
[sl̩ku]	[水]果	"fruit"	[M]M^		
[kʰEsl̩]	開[水]	"boiled water"	H[L]		DEV
[səsl̩]	十[四]	"fourteen"	L[R]		
Trisyllables containing [s̩]:					
[slə̃tsl̩]	[私]生子	"an illegitimate child"	[H]ML		
[jisl̩pɔ]	遺[世]寶	"an immatured person"	M[H]L		
[sl̩kutʰE]	[水]果攤	"fruit stalls"	[M]HL		
[ɕɣsl̩ka]	新[世]界	"a new world"	H[M]L	DEV	DEV
[kɔŋzə̃sl̩]	工程[司]	"an engineer"	HM[L]	DEV	DEV
[sl̩lEsl̩]	自來[水]	"tap water"	LH[L]	DEV	DEV
[məsl̩pi˧˥]	墨[水]筆	"an ink pen"	L[L]R	DEV	DEV
[lɔməsl̩]	綠墨[水]	"green ink"	LL[R]		
Quadrisyllables containing [s̩]:					
[sl̩tsl̩və̃di]	[師]資問題	"issue of teacher's quality"	[H]ML^L		
[kɔsl̩ɕisã]	教[書]先生	"a teacher"	M[H]ML		
[sl̩tɕʰitukʷhE]	[四]千多塊	"some 4,000 dollars"	[M]HML		
[tɨkosl̩fə̃]	的角[四]方	"square"	MH[M]L	DEV	DEV
[ɕisl̩kɔ̃ŋsl̩]	先[施]公司	"Xianshi Dept Store"	H[M]L^L	DEV	DEV
[ɕɣwɔ̃sl̩ti˧]	新華[書]店	"Xinhua Bookstore"	HM[L^]L	DEV	DEV
[fEgasɔsl̩]	蕃茄沙[司]	"ketchup"	HML^[L]	DEV	DEV
[həsEwɔsl̩]	瞎三話[四]	"talking nonsense"	MHM[L]	DEV	DEV
[lɪsl̩pɪtɕi]	歷[史]筆記	"history notes"	L[L]LR		
[səlɔsl̩tɕi]	十六[世]紀	"16th Century"	LL[L]R	DEV	DEV
[mɔdvlusl̩]	木頭螺[絲]	"a wood screw"	LLL[R]		

Table I. Vowel devoicing cases in the bisyllabic, trisyllabic and quadrisyllabic compounds which contain the test syllable [s̩].

COMPOUND			TONE PATTERN	SPEECH RATE NORMAL	FAST
Bisyllables containing [ɒi]:					
[ɒikʷo]	[西]瓜	"a watermelon"	(H)L		
[tsɩɒi]	仔[細]	"meticulous"	M(M^)		
[ɒipɔ]	[細]胞	"cells"	(M)M^		
[ɒʔɒi]	新[鮮]	"fresh"	H(L)		DEV
[sɘɒi]	直[線]	"a straight line"	L(R)		
Trisyllables containing [ɒi]:					
[ɒipofoŋ]	[西]北風	"westnorthly wind"	(H)ML		
[sɔɒisā]	趙[先]生	"Mr. Zhao"	M(H)L		
[ɒikʷʰalə]	[死]快了	"to die soon"	(M)HL		
[tsvɒisā]	周[先]生	"Mr. Zhou"	H(M)L		
[ɒioŋlEɒi]	凶來[西]	"kind of fierce"	HM(L)	DEV	DEV
[ɒiɔlEɒi˚]	小來[西]	"kind of small"	MH(L)		DEV
[mɘɒiku]	墨[西]哥	"Mexico"	L(L)R		
[polEɒi]	薄來[西]	"kind of thin"	LL(R)		
Quadrisyllables containing [ɒi]:					
[ɒipəlijia]	[西]伯利亞	"Siberia"	(H)ML^L		
[pɔɒikoŋsɩ]	保[險]公司	"an insurance company"	M(H)ML		
[ɒibitʰəli]	[嬪]皮壩臉	"frivolous"	(M)HML		
[pāβuɒikʷo]	澎湖[西]瓜	"Penghu watermelons"	MH(M)L	DEV	DEV
[ɒʔɒilÊɒi]	新[鮮]來西	"kind of fresh"	H(M)L^L		
[sEtõ̊ɒikʷo]	山東[西]瓜	"Shandong watermelons"	HM(L^)L	DEV	DEV
[ɒʔtɒʰilEɒi]	腥氣來[西]	"kind of fishy"	HML^(L)	DEV	DEV
[lɔkalEɒi]˚	老茄來[西]	"kind of boastful"	MHM(L)	DEV	DEV
[mɘɒikuɲiŋ]	墨[西]哥人	"Mexican people"	L(L)LR		
[səpɘ̃ɒikʷo]	日本[西]瓜	"Japanese watermelons"	LL(L)R		DEV
[moɲ̃ʔdvɒi]	木人頭[戲]	"a puppet show"	LLL(R)		

Table II. Vowel devoicing cases in the bisyllabic, trisyllabic and quadrisyllabic compounds which contain the test syllable [ɒi].

COMPOUND			TONE PATTERN	SPEECH RATE NORMAL	SPEECH RATE FAST
Quadrisyllables containing [ts̩]:					
[tsɪtsʰEtsiatɕɪʔ]	[資]産階級	"capitalists"	(H) ML^L		
[tɕʰɪtsɪ̩pɐtɕʔ]	七[嘴]八搭	"talkative"	M (H) ML		
[tsɪsʌwɐtsiɐʔ]	[指]手劃腳	"gesticulating"	(M) HML		
[ɐiɔsʌtsɪ̩kʰɐʔ]	小手[指]甲	"pinkie nail"	MH (M) L		DEV
[tɐʏtsɪ̩tili]	金[子]店裡	"in a gold shop"	H (M) L^L		
[tɐʏnʏtsɪpɔ]	金銀[珠]寶	"jewellry"	HM (L^) L		DEV
[tsɪsɐvɔ̃tsɪ]	知識份[子]	"intellectuals"	HML^ (L)	DEV	DEV
[jɪtʰɐkʷɐtsɪ]	一場剎[子]	"all there is"	MHM (L)	DEV	DEV
[ɦɐtsɪkEdv]	盒[子]蓋頭	"a box cover"	L (L) LR		
[sɐpɔ̃tsɪtsʰE]	日本[紫]菜	"Japanese sea weed"	LL (L) R		DEV
[mɔvkɔtsɪ]	木而覺[知]	"insensible"	LLL (R)		
Quadrisyllables containing [tsʰ̩]:					
[tsʰ̩lmɔdɪivtsʰ̩]	[吹]毛求疵	"critical"	(H) ML^L		
[tɐitsʰ̩ɪsEfE]	幾[次]三番	"repeatedly"	M (H) ML		
[tsʰ̩ɪsukEli]	[廁]所間裡	"in the toilet"	(M) HML		
[ɲøfo̤tsʰ̩ɪkʷɐʔ]	寒風[剌]骨	"icy wind"	LH (M) L	DEV	DEV
[fɔ̃tsʰ̩ɪtɐ̃tɕɪʔ]	諷[刺]打擊	"satirical attack"	H (M) L^L		DEV
[ɐʔvɔ̃tsʰ̩ɪtsE]	新聞[處]長	"a news director"	HM (L^) L	DEV	DEV
[sEpɐtutsʰ̩]	三佰多[次]	"some 300 times"	HML^ (L)	DEV	DEV
[sɪpɐtutsʰ̩]	四佰多[次]	"some 400 times"	MHM (L)	DEV	DEV
[sɐtsʰ̩pɐtsʰ̩]	十[次]八次	"8 or 10 times"	L (L) LR	DEV	DEV
[mɔdvtsʰ̩tɔ]	木頭[剌]刀	"a wooden bayonet"	LL (L) R	DEV	DEV
[lɔzɐtutsʰ̩]	六十三[次]	"63 times"	LLL (R)		

Table III. Vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [ts̩] or [tsʰ̩].

COMPOUND			TONE PATTERN	SPEECH RATE NORMAL	FAST
Quadrisyllables containing [tɕi]:					
[tɕitɕʰikoŋsl̥]	[機]器公司	"a machine company"	(H)ML^L		
[ɕiɔtɕitɕiətsɔ]	小[雞]腳爪	"a small chicken claw"	M(H)ML		
[tɕitElEɕi̥]	[簡]單來西	"simple"	(M)HML		
[slzətɕitʰā]	四十[幾]趟	"some 40 times"	MH(M)L		
[fitɕikoŋsl̥]	飛[機]公司	"an airplane company"	H(M)L^L		
[ɕĭvətɕitsə̊]	新聞[記]者	"a reporter"	HM(L^)L		DEV
[tɕʰifāpətɕi]	千方百[計]	"trying every way"	HML^(L)	DEV	DEV
[ɕiɔtsɔɕiāt̥i̥]	小照相[機]	"a small camera"	MHM(L)	DEV	DEV
[sətɕibutsl̥]	日[記]簿子	"a diary"	L(L)LR		
[lozətɕitʰā]	六十[幾]趟	"some 60 times"	LL(L)R		
[lozəlotɕi]	六十六[幾]	"sixty six times"	LLL(R)		
Quadrisyllables containing [tɕʰi]:					
[tɕʰifāpətɕi̥]	[千]方百計	"trying every way"	(H)ML^L		
[sltɕʰitukʷʰE]	四[千]多塊	"some 4,000 $"	M(H)ML		
[tɕʰitsʰokoŋsl̥]	[汽]車公司	"a car company"	(M)HML		
[slbEtɕʰitsʰo]	自備[汽]車	"a private car"	LH(M)L		DEV
[sĖtɕʰitukʷʰE]	三[千]多塊	"some 3,000 $"	H(M)L^L		DEV
[sEsltɕʰi̥kʷʰE]	三四[千]塊	"some 3 - 4,000 $"	HM(L^)L	DEV	DEV
[pəlEpətɕʰi̥]	奔來奔[去]	"running around"	HML^(L)	DEV	DEV
[ɕijiākʷatɕʰi̥]	死傢怪[氣]	"spiritless"	MHM(L)	DEV	DEV
[lotɕʰitukʷʰE]	六[千]多塊	"some 6,000 dollars"	L(L)LR		DEV
[səpətɕʰitsʰo]	日本[汽]車	"Japanese cars"	LL(L)R		DEV
[təlEdətɕʰi]	踏來踏[去]	"stepping around"	LLL(R)		

Table IV. Vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [tɕi] or [tɕʰi].

COMPOUND			TONE PATTERN	SPEECH RATE NORMAL	FAST
Quadrisyllables containing [fu]:					
[futɕʰiliãnɪŋ]	[夫]妻兩人	"husband & wife"	[H]ML^L		
[tsəfutɕɪli]	正[副]經理	"manager & assistant manager"	M[H]ML		
[futɕɪlisəʔ]	[副]經理室	"assistant manager's office"	[M]HML		
[fəjiəfukʰE]	文學[副]刊	"literary supplements"	MH[M]L		
[tsʌfutɕɪli]	周[副]經理	"Assist. Manager Chov"	H[M]L^L		
[ɕɪvəfukʰE]	新聞[副]刊	"news supplements"	HM[L^]L		DEV
[sElətsʰofu]	三輪車[夫]	"a 3-wheeled cab rickshaw driver"	HML^[L]	DEV	DEV
[molɪkʰufu]	馬林可[夫]	"Malinkov"	LHM[L]	DEV	DEV
[lofusʌtʰɔ]	六[副]手套	"six pairs of gloves"	L[L]LR		
[lotsəfudʌ]	六隻[斧]頭	"six axes"	LL[L]R		
[molotʰofu]	莫洛托[夫]	"Molotov"	LLL[R]		
Quadrisyllables containing [hu]:					
[hutʰihEdi]	[呼]天喊地	"yelling"	[H]ML^L		
[kohukoŋsɪ]	國[貨]公司	"a Chinese product store"	M[H]ML		
[hutʰihudi]	[火]天火地	"fire everywhere"	[M]HML		
[ŋakohutʰE]	外國[火]腿	"foreign ham"	LH[M]L		DEV
[tʰoŋhubătsă]	通[貨]膨脹	"inflation"	H[M]L^L		
[tɕɪwohutʰE]	錦華[火]腿	"Jing-Hua ham"	HM[L^]L		DEV
[fitsʌlɔhu]	非洲老[虎]	"African tigers"	HML^[L]		DEV
[ɕiɔsllEhu]	小自來[火]	"little matches"	MHM[L]		DEV
[səhutili]	雜[貨]店裡	"in a grocery store"	L[L]LR		
[sətɕɪhuthE]	十斤[火]炭	"10 ketties of charcoal"	LL[L]R		
[modʌlɔhu]	木頭老[虎]	"a wooden tiger"	LLL[R]		

Table V. Vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [fu] or [hu].

Tone Pattern on Quadrisyllables	[s̩]		[ts̩]		[tsʰ̩]		[ɕi]		[tɕi]		[tɕʰi]		[fu]		[hu]	
	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F
[H] M L^ L																
M [H] M L																
[M] H M L																
M/L H [M] L	D	D		D	D	D	D	D				D				D
H [M] L^ L	D	D				D						D				
H M [L^] L	D	D		D	D	D	D	D		D	D	D		D		D
H M L^ [L]	D	D	D	D	D	D	D	D	D	D	D	D	D	D		D
M/L H M [L]	D	D	D	D	D	D	D	D	D	D	D	D	D	D		D
L [L] L R					D	D						D				
L L [L] R	D	D		D	D	D		D				D				
L L L [R]																

Table VI. Vowel devoicing cases in the quadrisyllabic compounds which contain the test syllable [s̩], [ts̩], [tsʰ̩], [ɕi], [tɕi], [tɕʰi], [fu] or [hu] (H = high tone; M = mid tone; L^ = raised low tone; L = low tone; R = LM rising tone; N = normal speech rate; F = fast speech rate; D = vowel devoiced)

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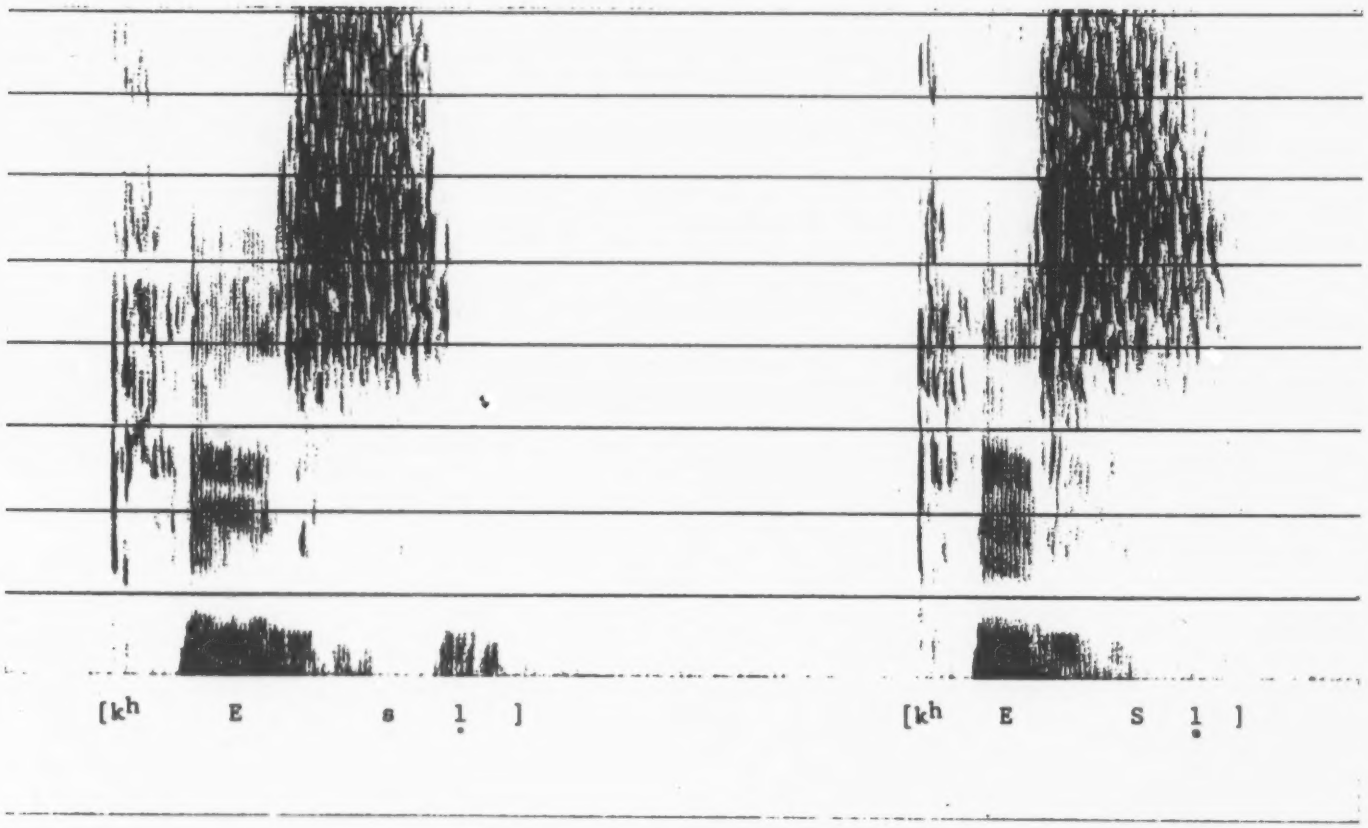

Fig.(1) Spectrograms of the bisyllabic compound [kʰEsl̥][HL]"boiled water" uttered at normal (left) and fast (right) speech rates.

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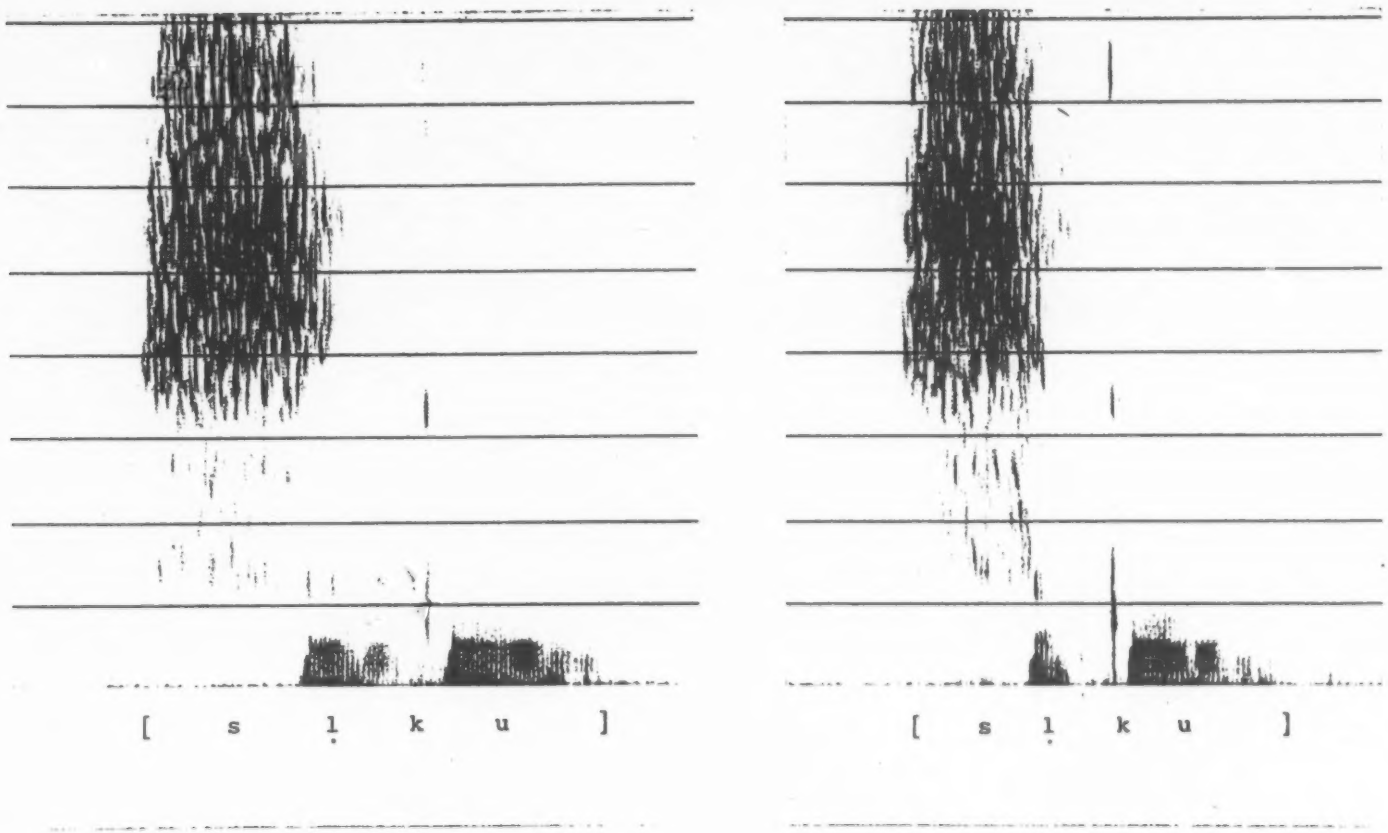

Fig.(2) Spectrograms of the bisyllabic compound [sl̥ku][MM^]"fruit" uttered at normal (left) and fast (right) speech rates.

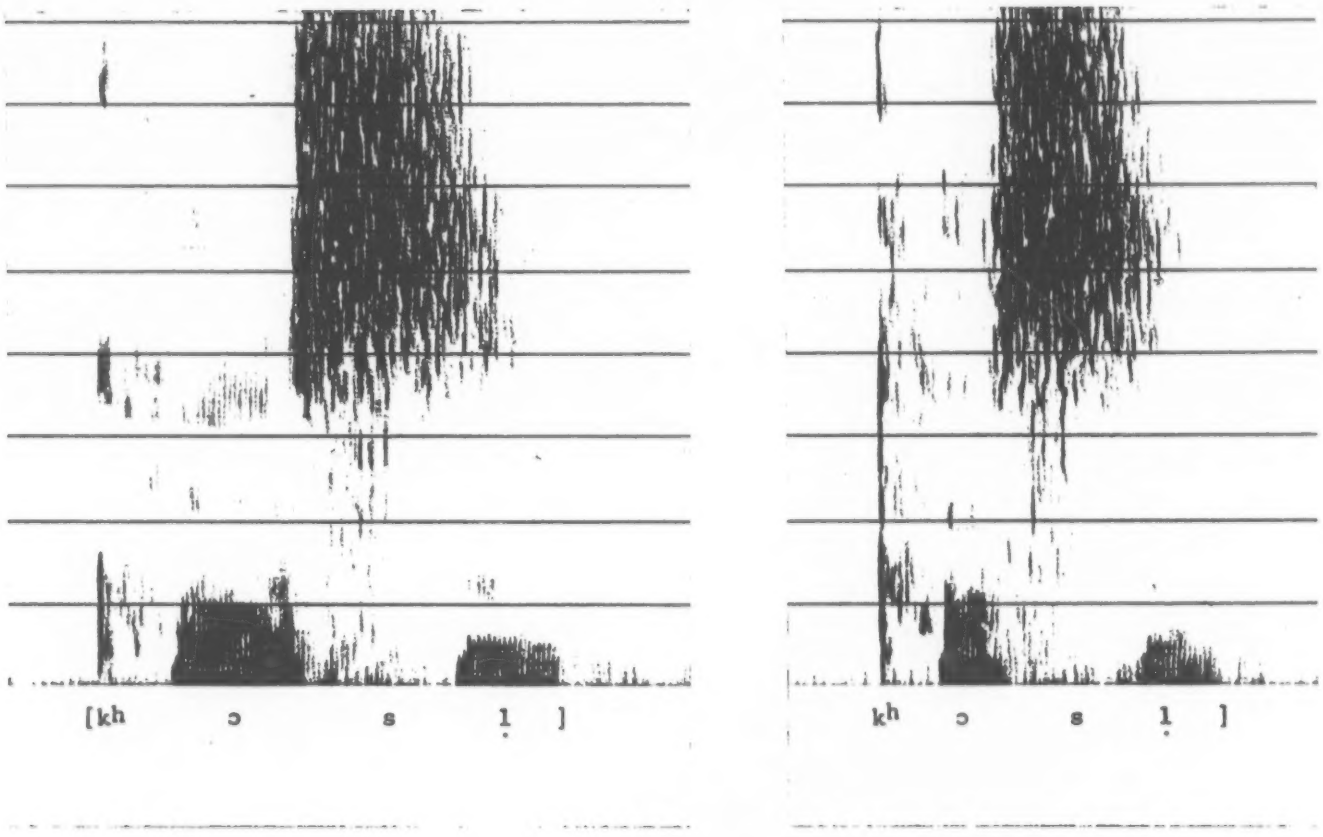

Fig.(3) Spectrograms of the bisyllabic compound [kʰɔsl̩][MM^]"examination" uttered at normal (left) and fast (right) speech rates.

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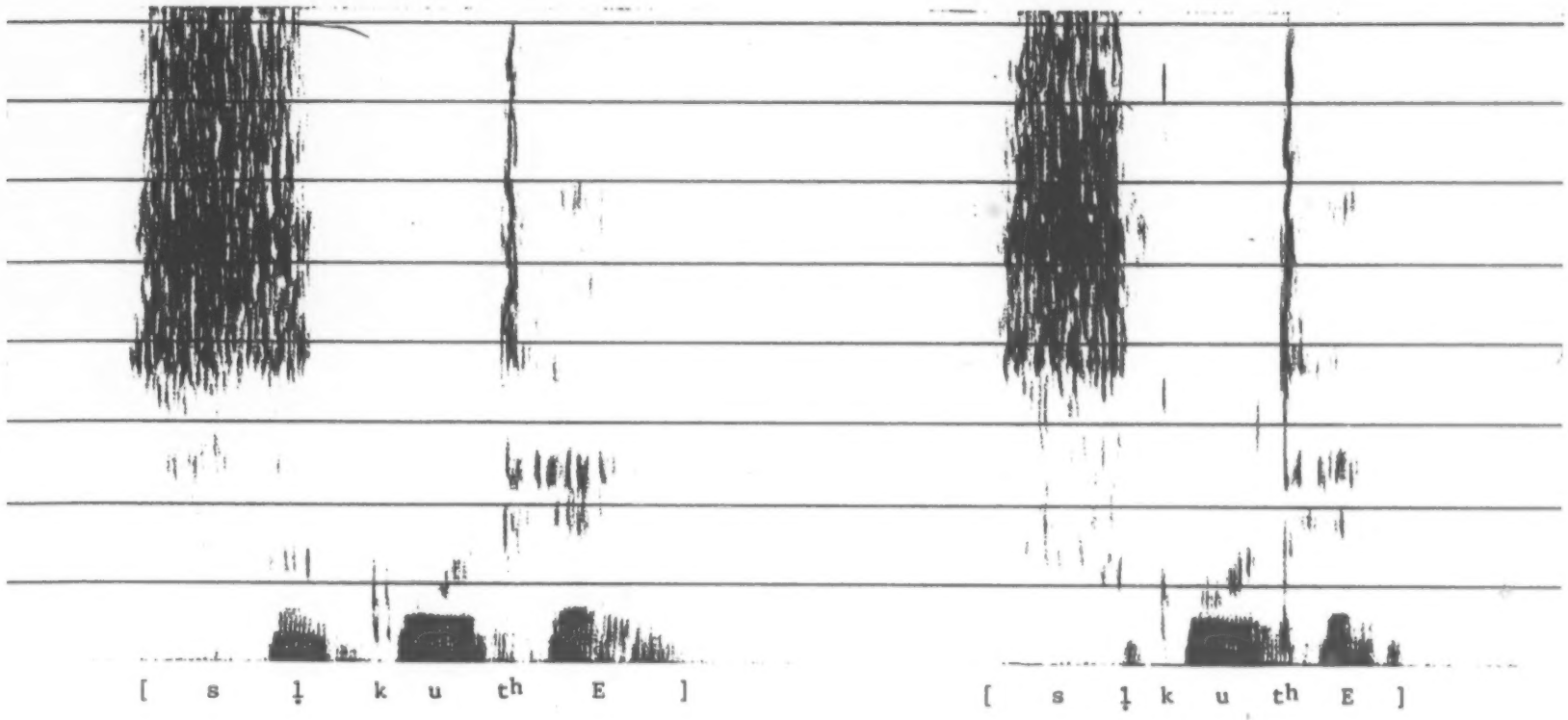

Fig.(4) Spectrograms of the tirsyllabic compound [sɻkut^{h}E][MHL]"fruit stalls" uttered at normal (left) and fast (right) speech rates.

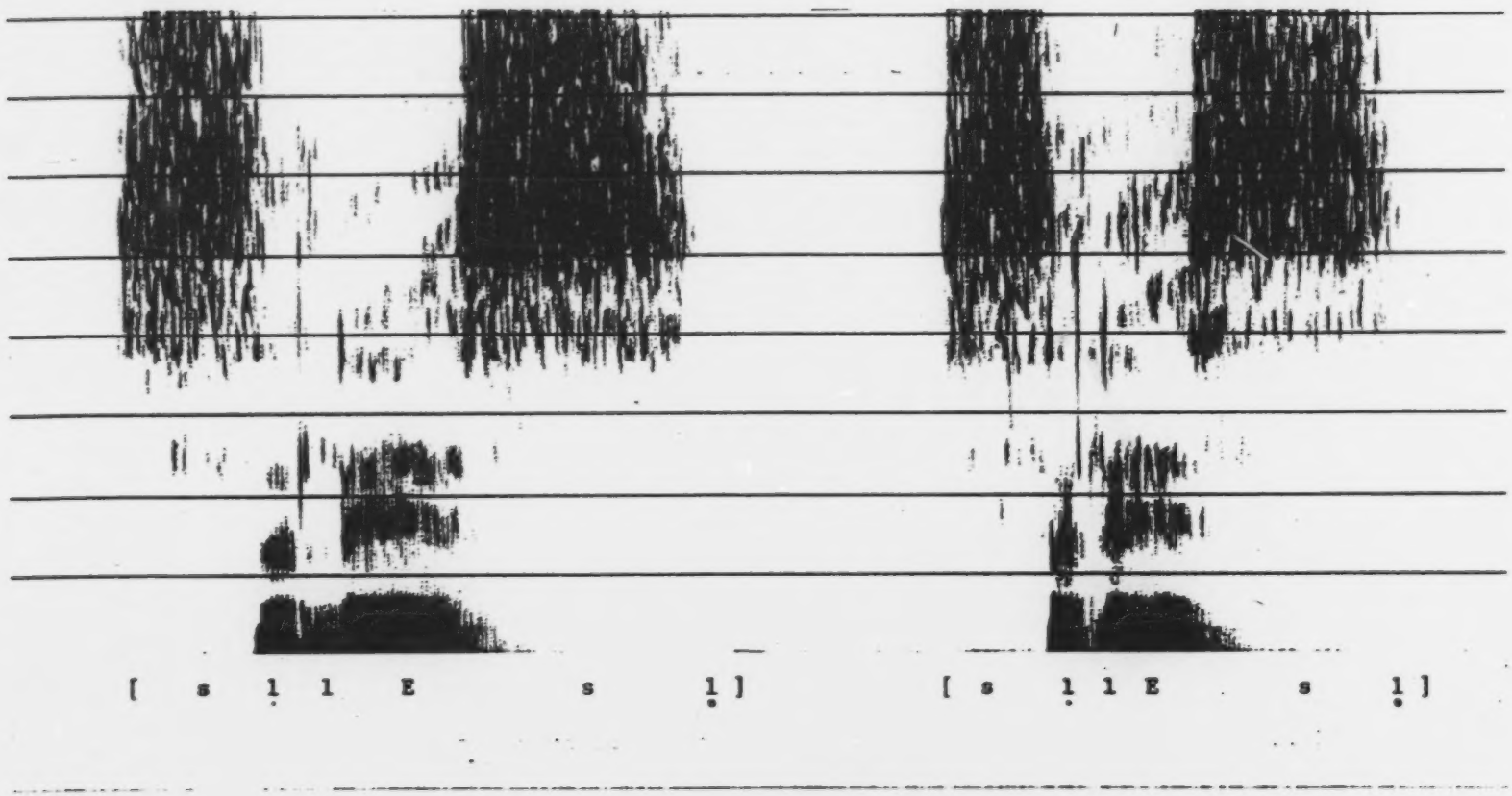

Fig.(5) Spectrograms of the trisyllabic compound [sl̥lEsl̥][LHL]"tap water" uttered at normal (left) and fast (right) speech rates.

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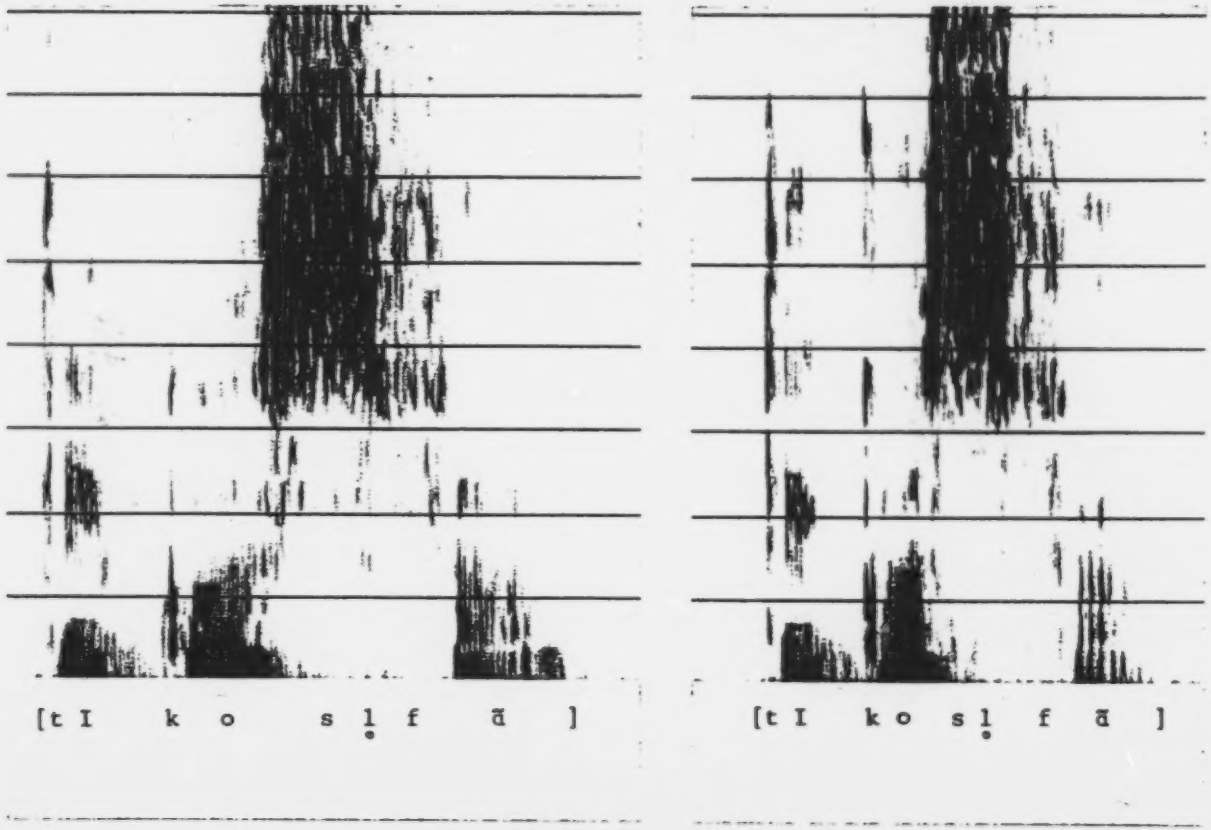

Fig.(6) Spectrograms of the quadrisyllabic compound [tIkoslfɑ̃][MHML]"square" uttered at normal (left) and fast (right) speech rates.

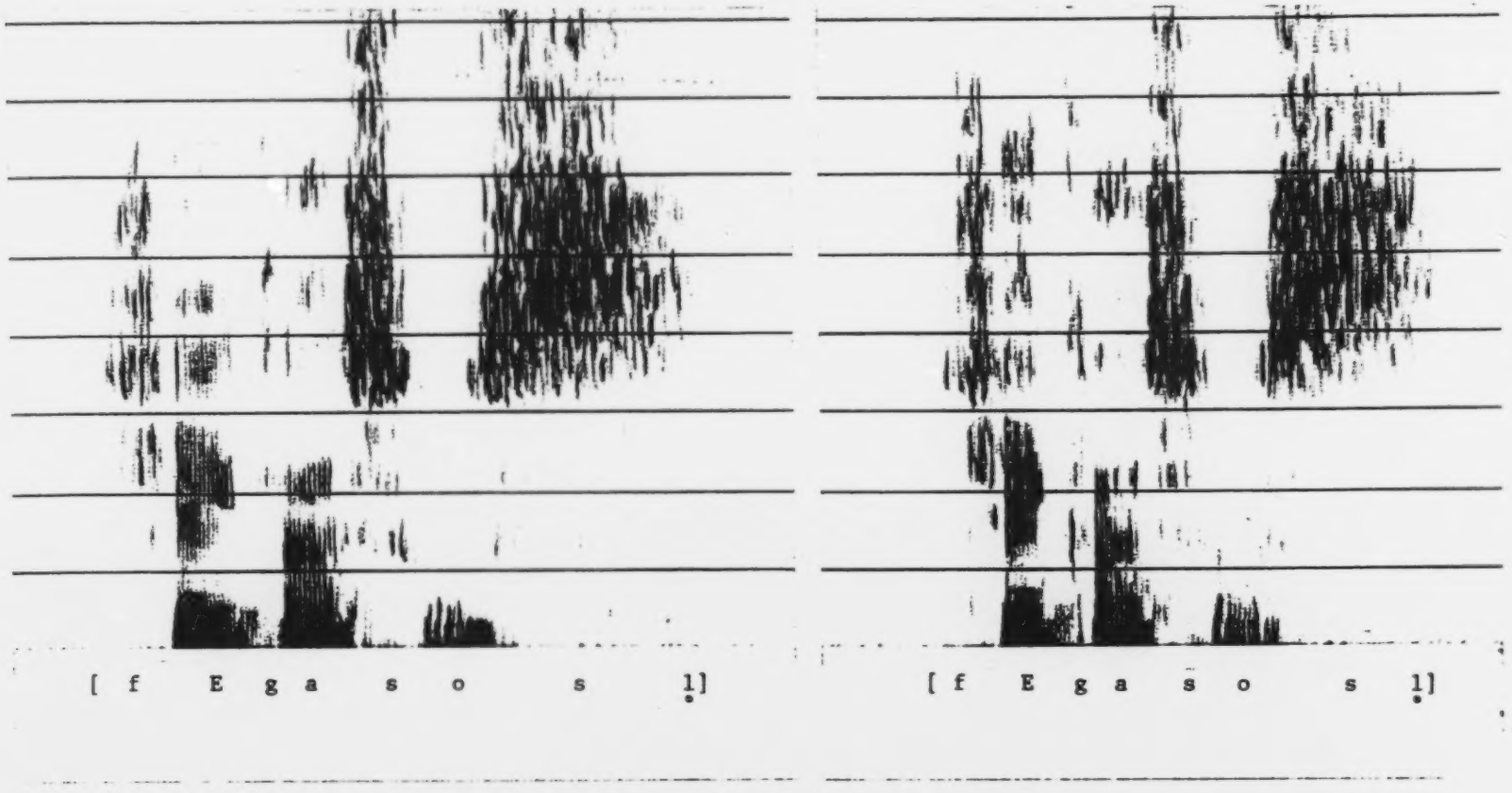

Fig.(7) Spectrograms of the quadrisyllabic compound [fEgasos$\dot{1}$][HML^L]"tomato sauce" uttered at normal (left) and fast (right) speech rates.

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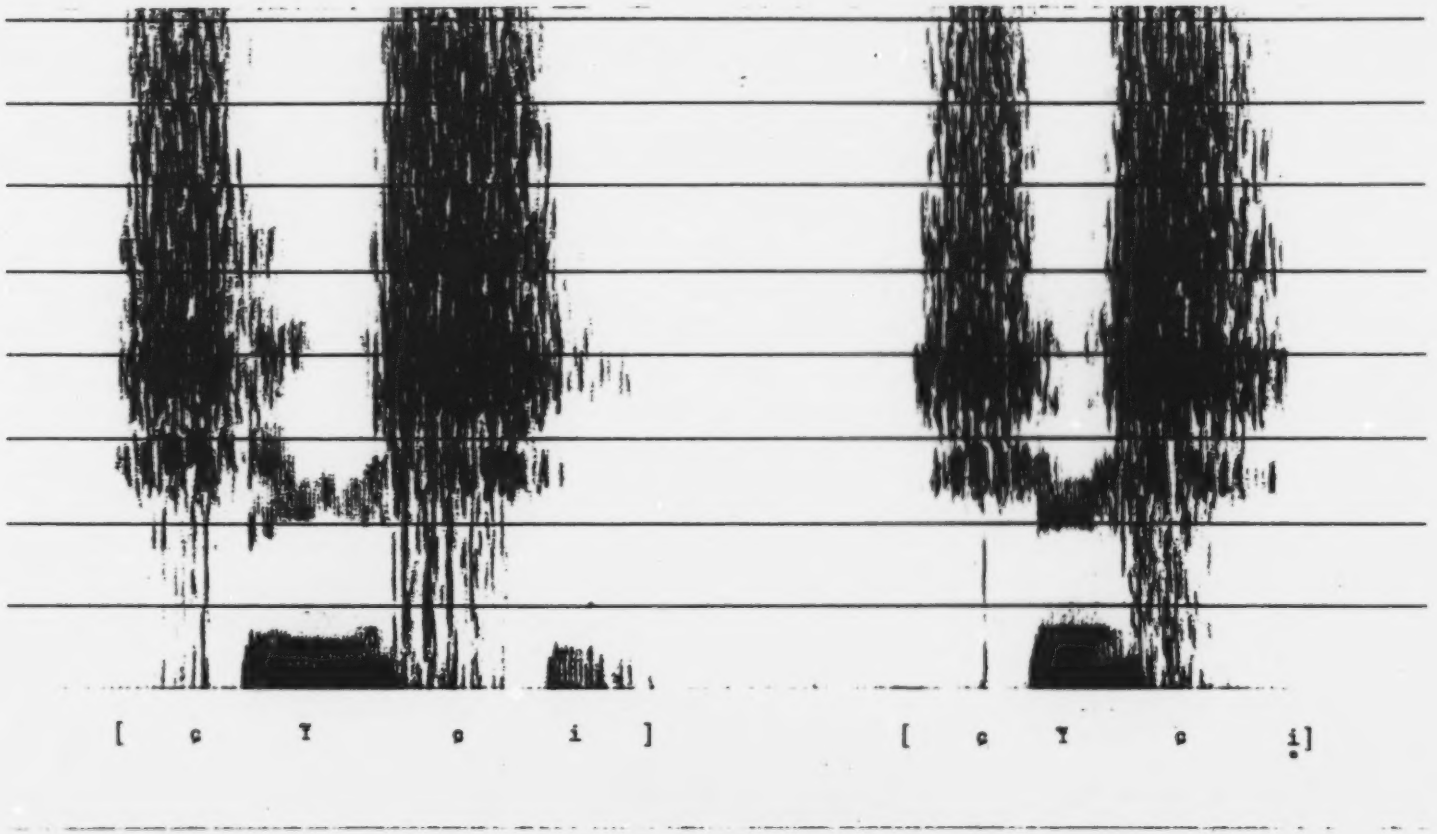

Fig.(8) Spectrograms of the bisyllabic compound [ɕƔɕi][HL]"fresh" uttered at normal (left) and fast (right) speech rates.

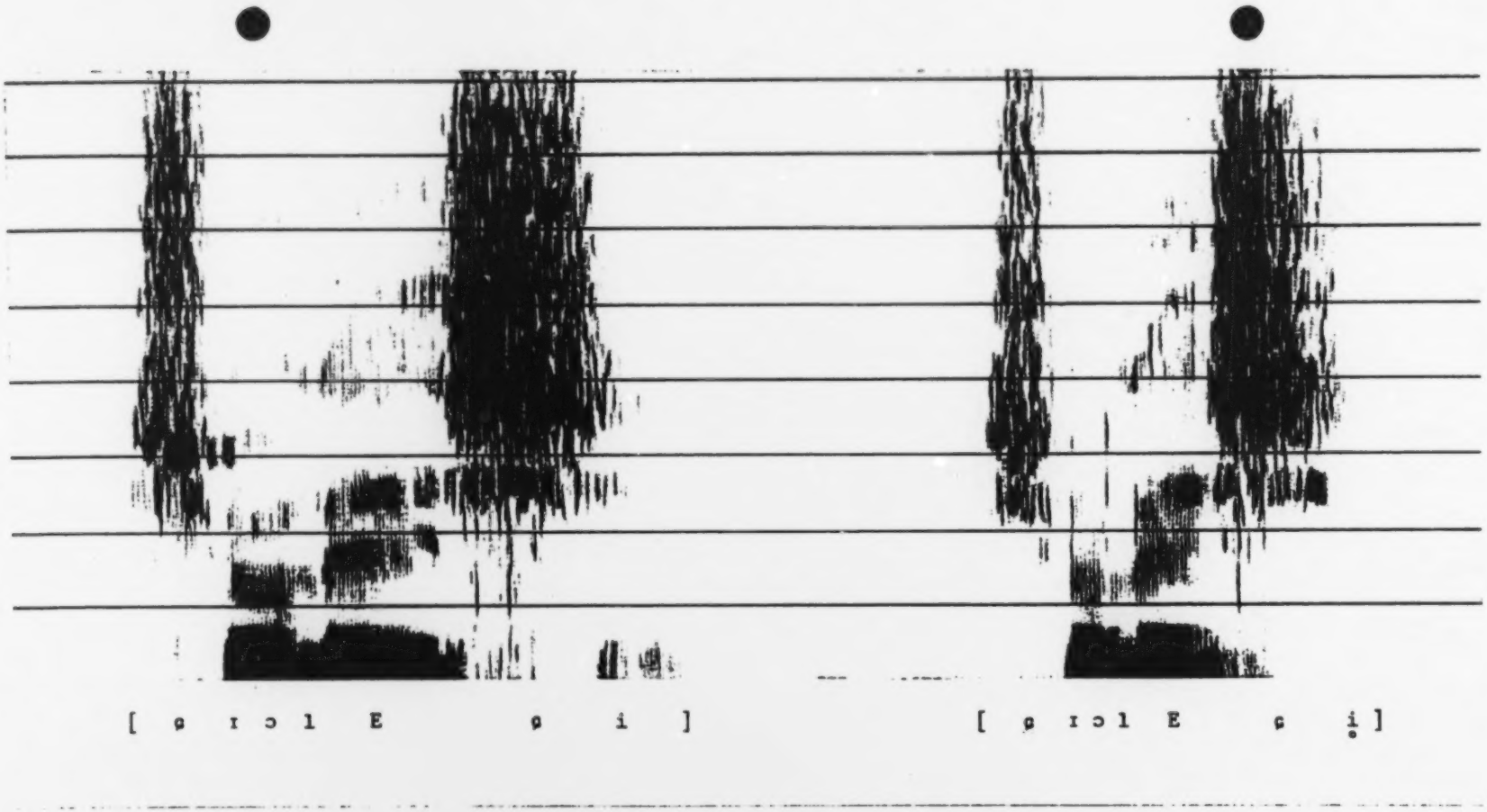

Fig.(10) Spectrograms of the trisyllabic compound [ɸɪɔlEɸi][MHL] "kind of small" uttered at normal (left) and fast (right) speech rates.

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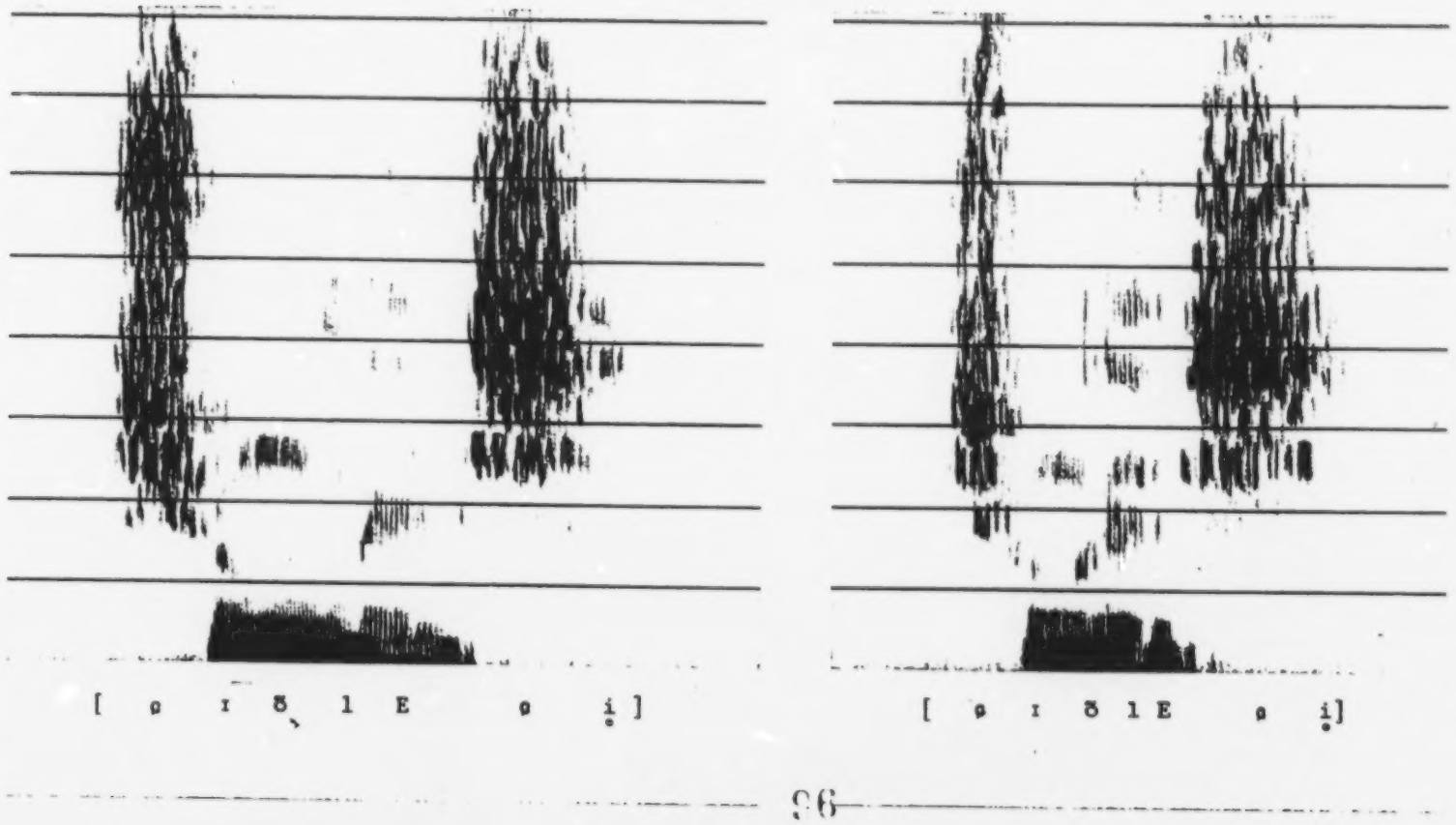

Fig.(9) Spectrograms of the trisyllabic compound [ɑɪðlEɑi][HML]"kind of fierce" uttered at normal (left) and fast (right) speech rates.

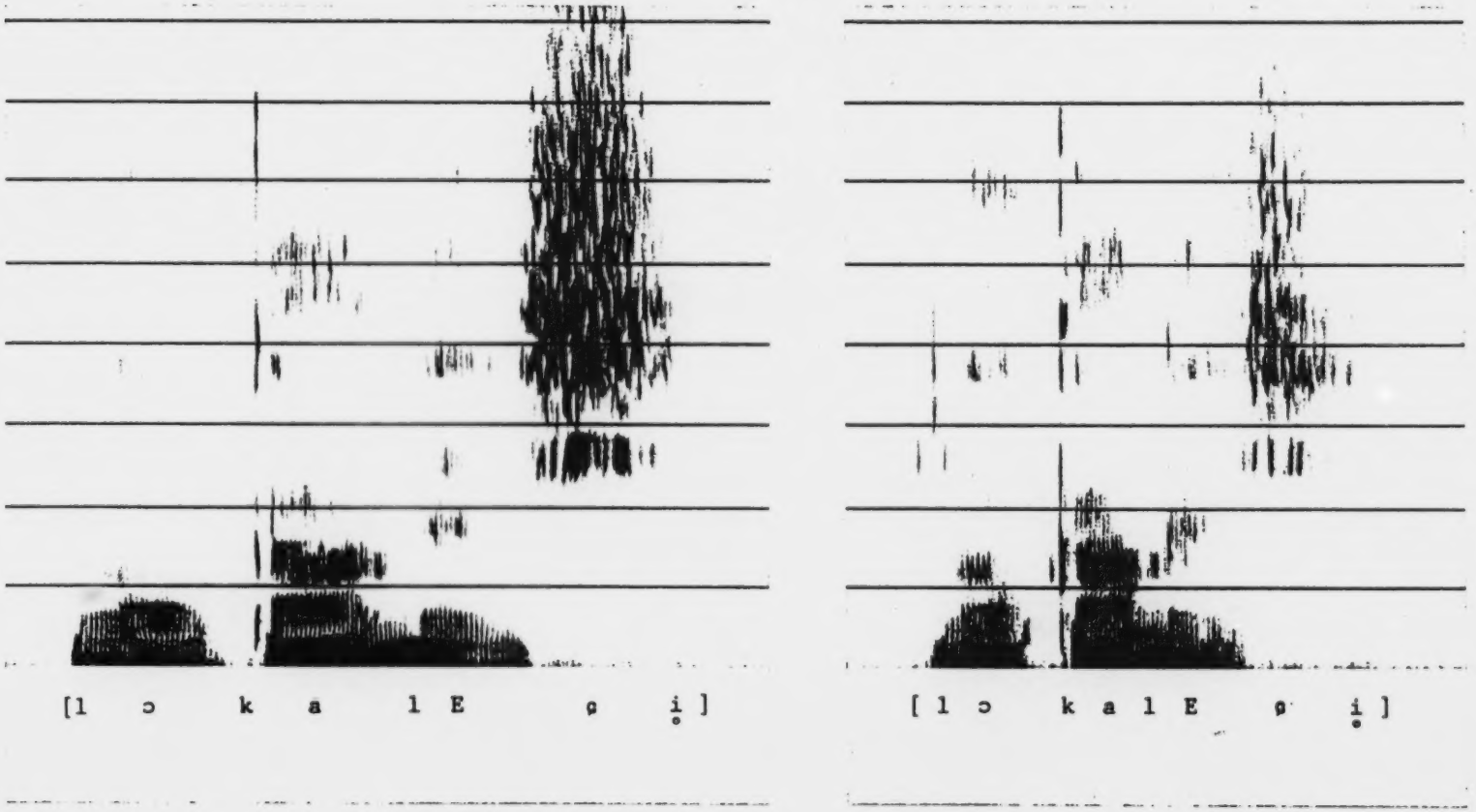

Fig.(11) Spectrograms of the quadrisyllabic compound [lɔkalEɸi̥][LHML]" kind of boastful" uttered at normal (left) and fast (right) speech rates.

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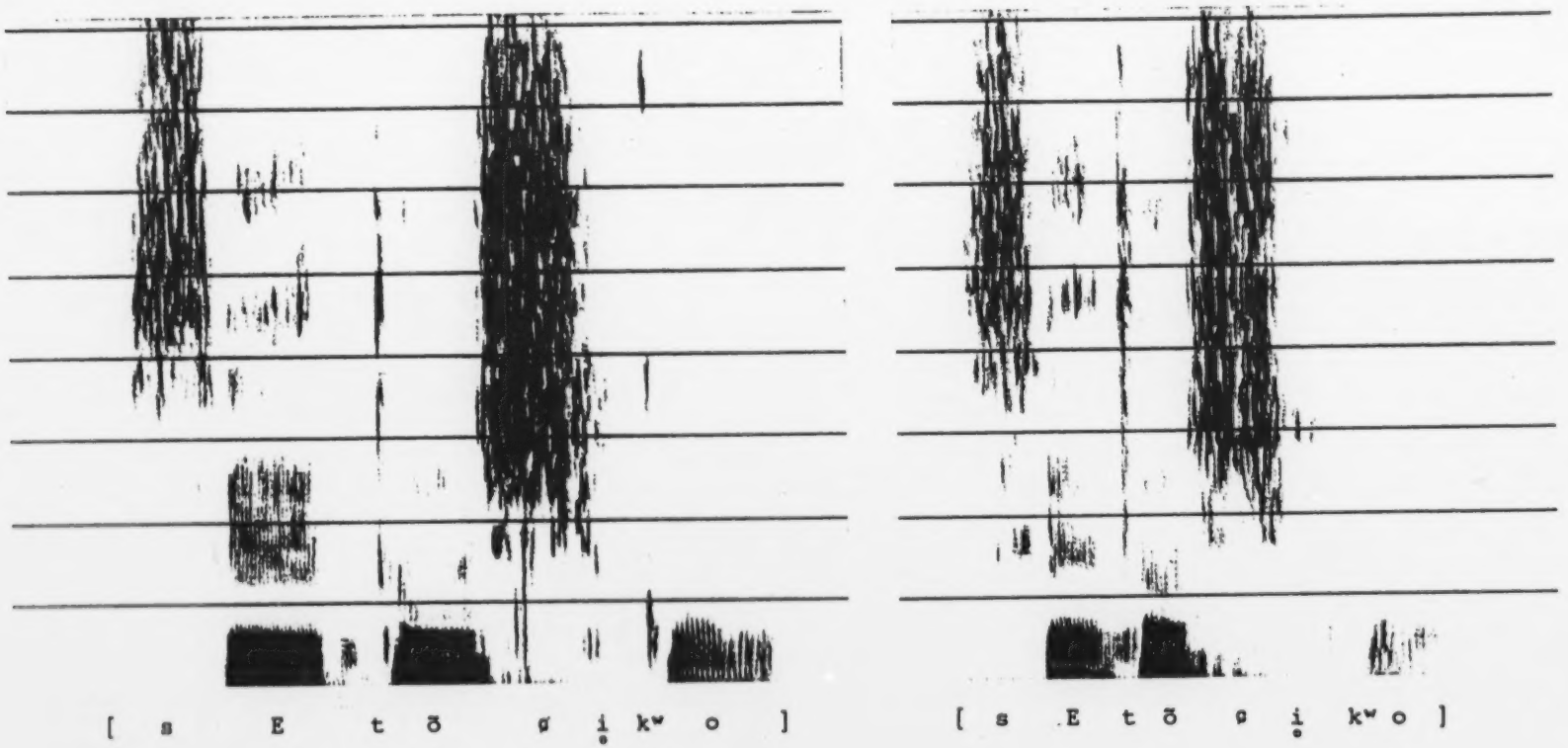

Fig.(12) Spectrograms of the trisyllabic compound [sEtõɕi̥kʷo][HML^L]"Shandong watermelons" uttered at normal (left) and fast (right) speech rates.

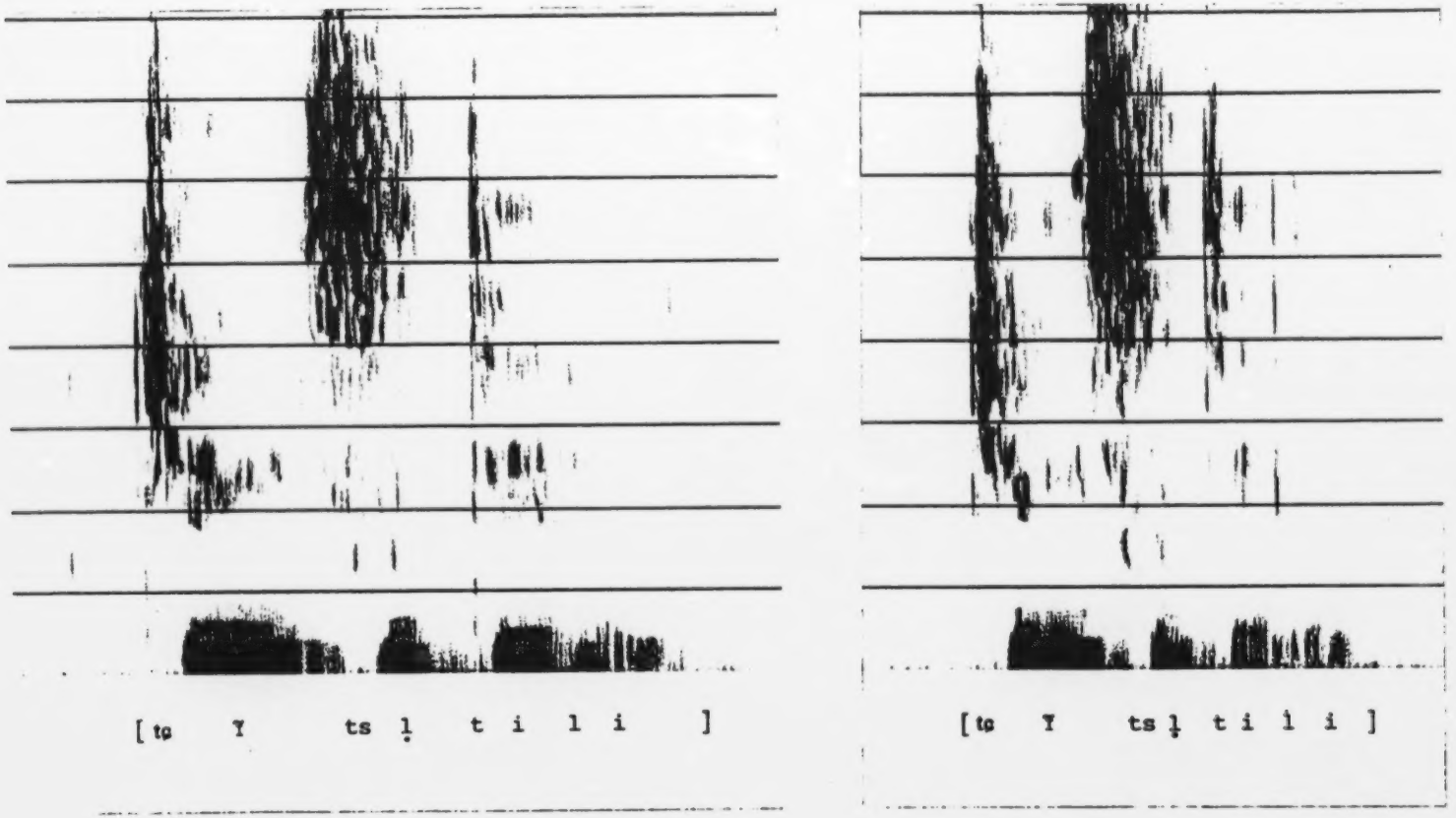

Fig.(13) Spectrograms of the quadrisyllabic compound [tɕʔtsɻtili][HML^L] "in a gold shop" uttered at normal (left) and fast (right) speech rates.

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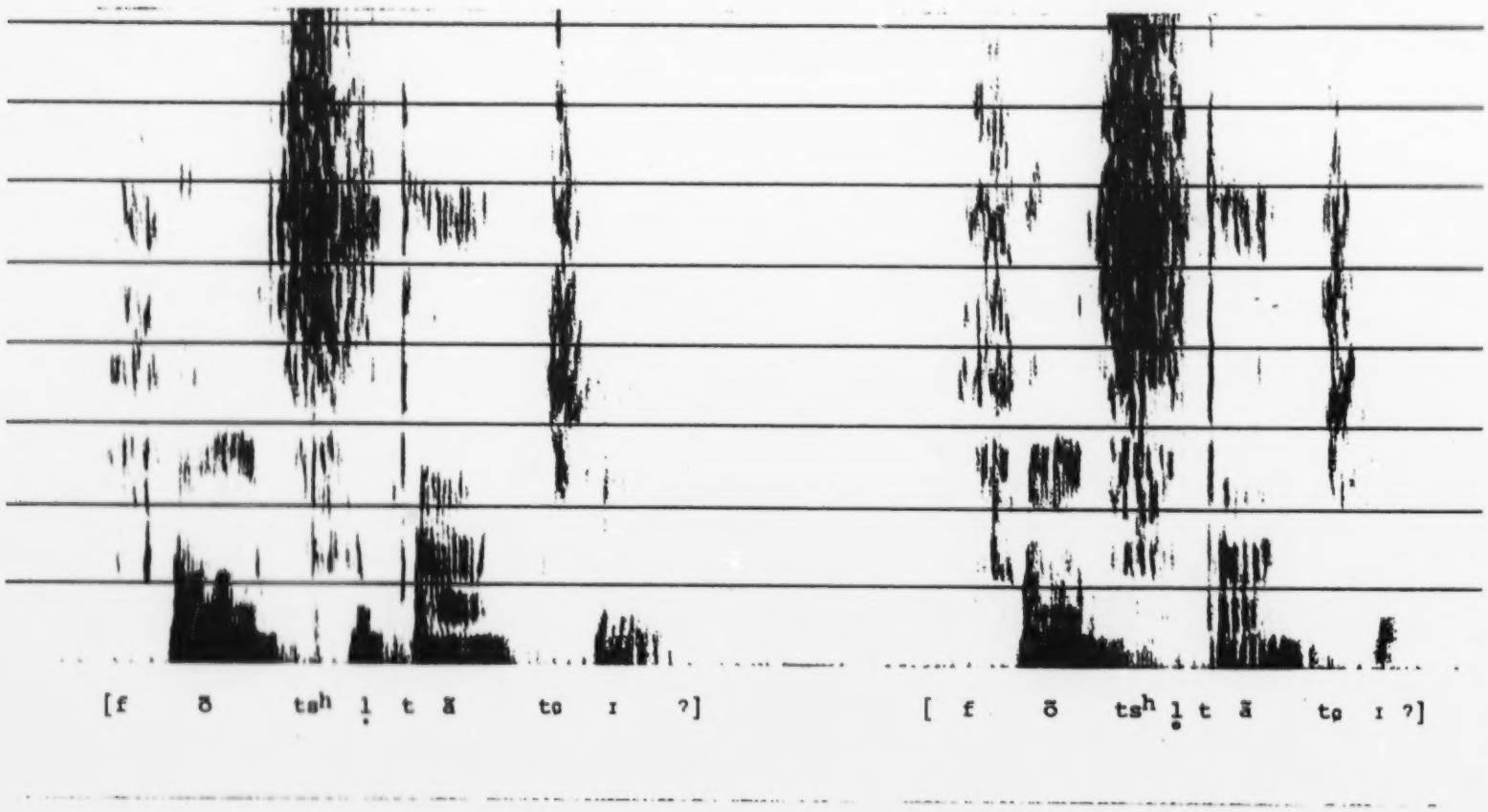

Fig.(14) Spectrograms of the quadrisyllabic compound [fɔ̃tsʰl̥tãtɑɪʔ][HML^L]"satirical attack" uttered at normal (left) and fast (right) speech rates.

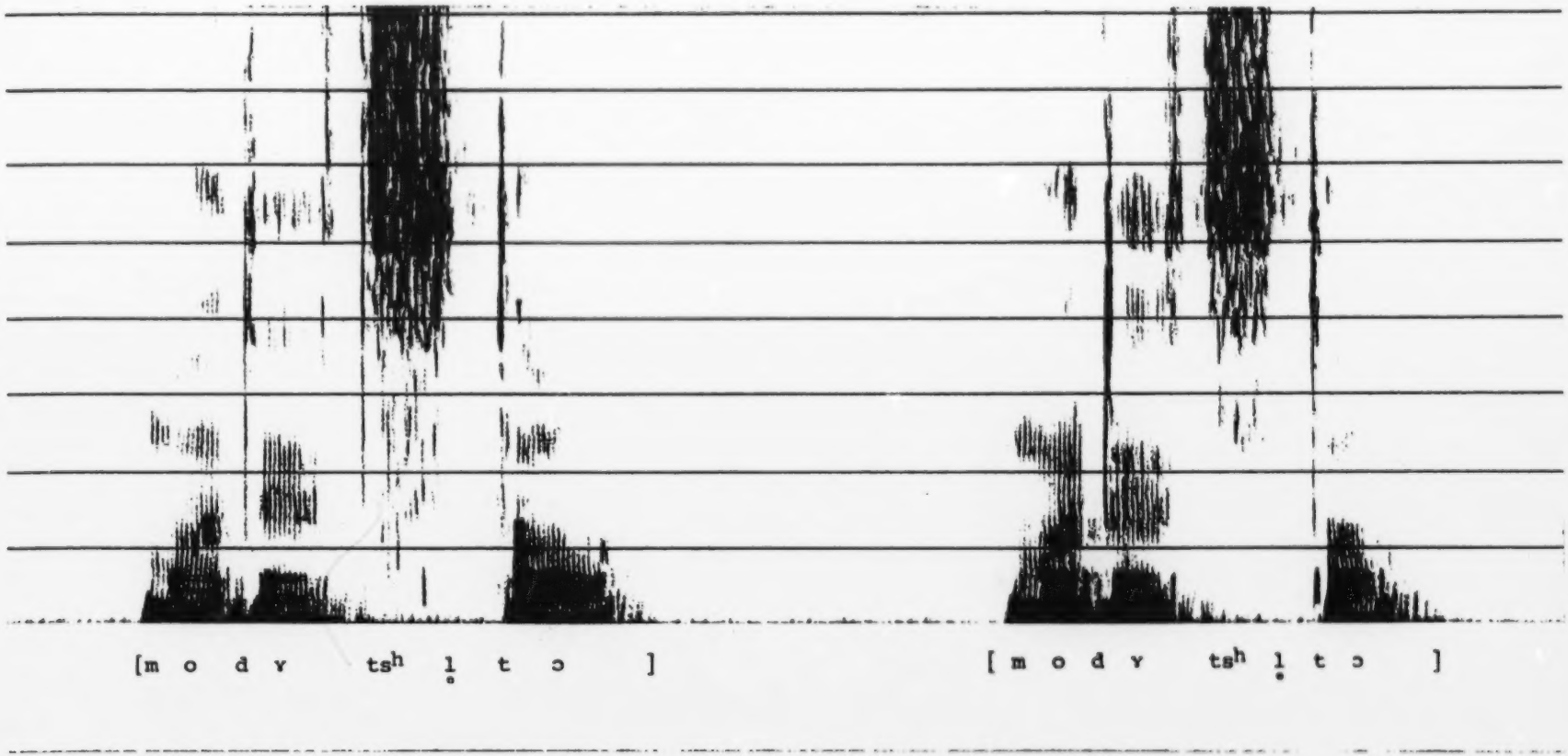

Fig.(15) Spectrograms of the quadrisyllabic compound [modʏtsʰl̥tɔ][LLLM]"a wooden bayonet" uttered at normal (left) and fast (right) speech rates.

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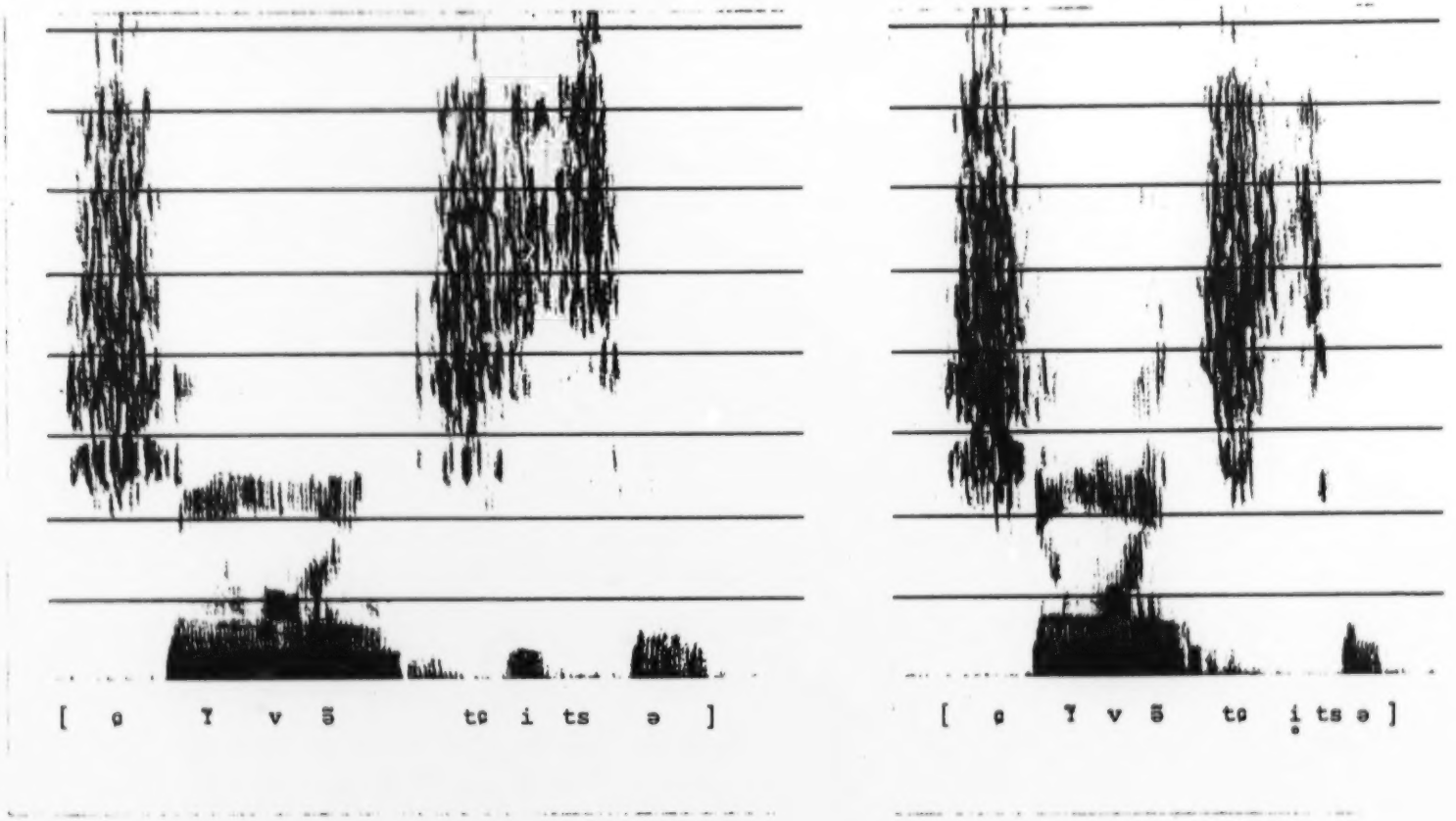

Fig.(16) Spectrograms of the quadrisyllabic compound [ɸɪvɜ̃tɕitsə][HML^L]"news reporters" uttered at normal (left) and fast (right) speech rates.

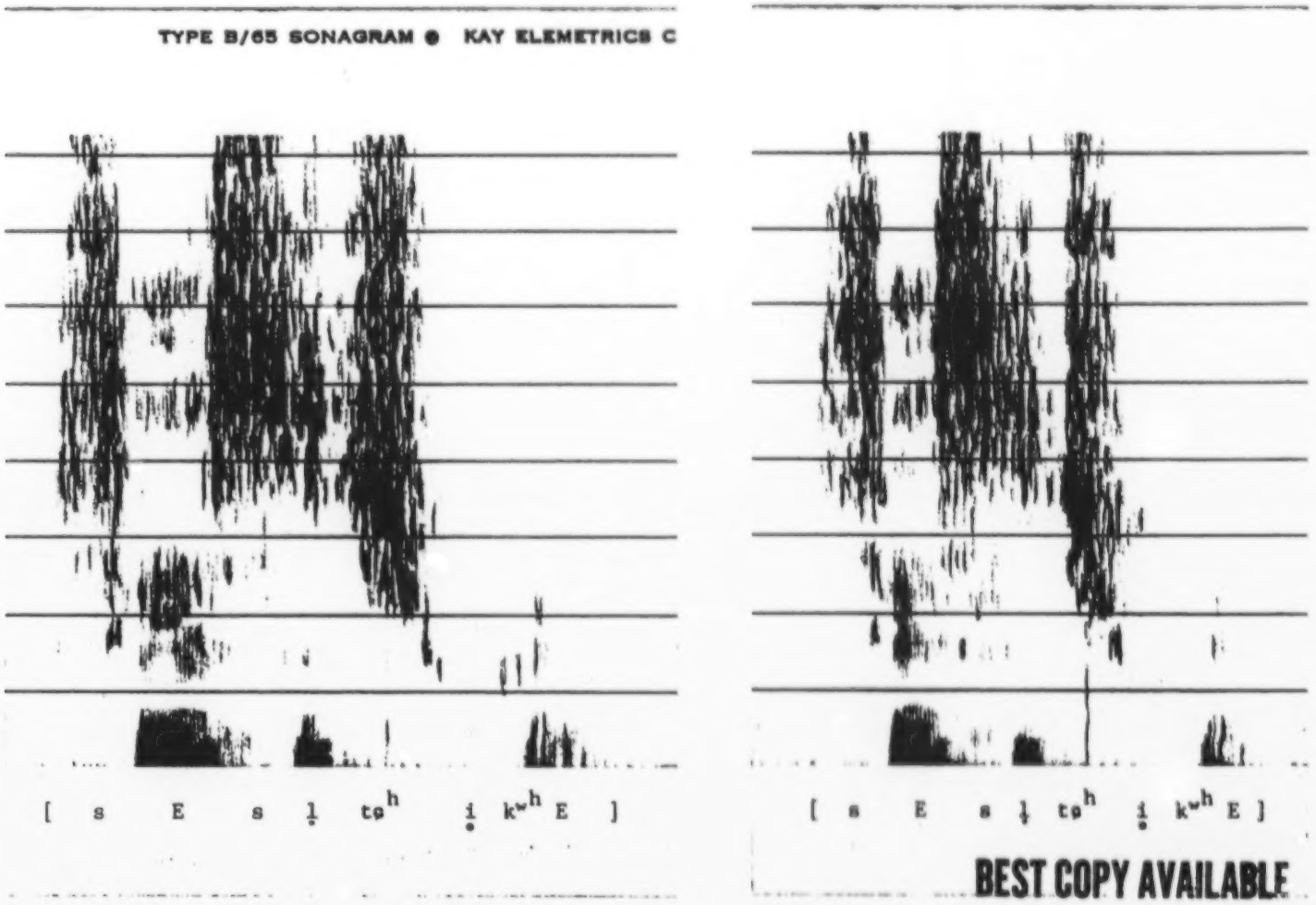

Fig.(17) Spectrograms of the quadrisyllabic compound [sEsl̥tʰikʷʰE][HML^L]"some three to four thousand dollars" uttered at normal (left) and fast (right) speech rates. of speech.

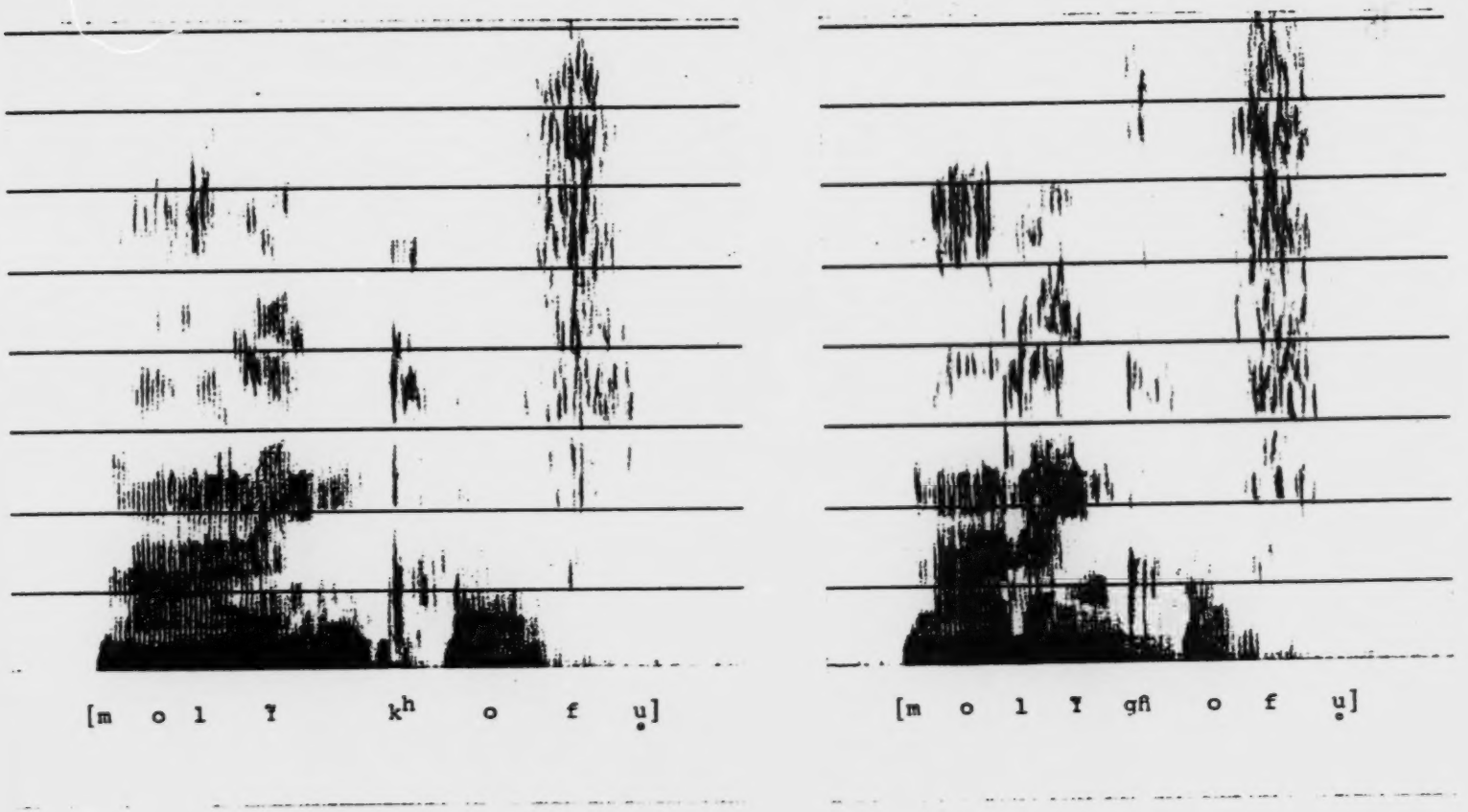

Fig.(18) Spectrograms of the quadrisyllabic compound [molɣkʰufu̥][МНМL]"Malinkov(a Russian name)" uttered at normal (left) and fast (right) speech rates.

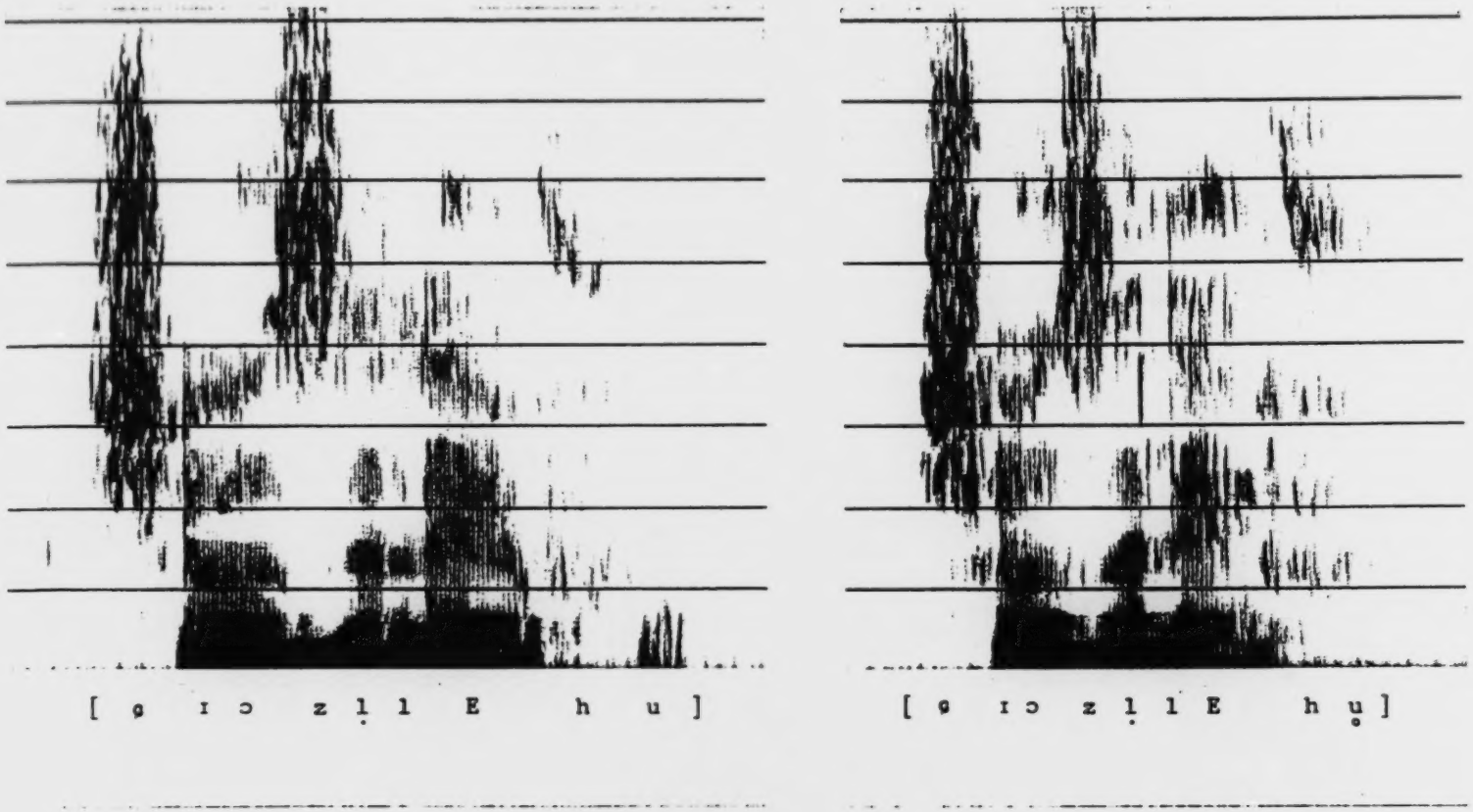

Fig.(19) Spectrograms of the quadrisyllabic compound [øɪɔzllEhu][MHML]"small matches" uttered at normal (left) and fast (right) speech rates.

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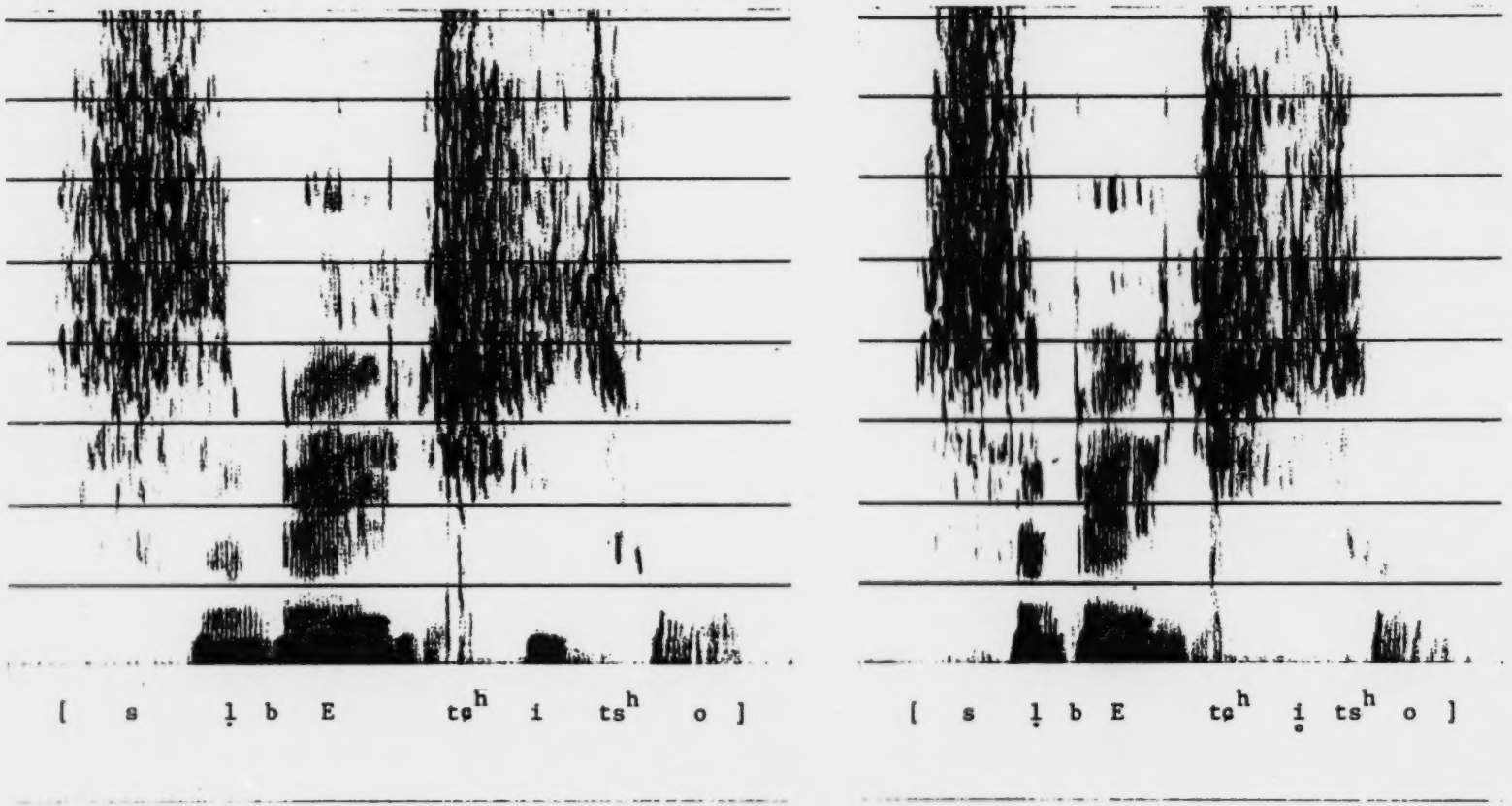

Fig.(20) Spectrograms of the quadrisyllabic compound [sl̥bEtɕʰi̥tsʰo][LHML]"a private car" uttered at normal (left) and fast (right) speech rates.

CUHK PAPERS IN LINGUISTICS No.2 (Aug 1990)

SOME NOTES ON DIALECT IN RECENT ENGLISH LITERATURE

Mark Newbrook *
CUHK

The use of dialect in English literary work was at one time discussed mainly by literature scholars and for the most part somewhat impressionistically. Of late, however, dialectologists and other linguists have begun to produce work on this topic. The most obvious example is Blake 1981, which provides a three-page bibliography of other secondary material. Of course, much of this work is still apt to appear rather naive and non-rigorous to the linguists, but there are exceptions, such as the account by a professional dialectologist of the use of Yorkshire dialect in the novels of Emily Bronte (Petyt 1980), and also some other pieces of a more general and/or theoretical nature. However, the focus is in almost all cases upon works dating from the nineteenth century and earlier. For instance, only one chapter (pp183-199) of Blake's book deals with the post-1945 period. It is the purpose of this paper to draw attention to the scope for dialectological investigation of the most recent literature. The phenomena discussed below are of the greatest interest, and were come upon by the merest chance in reading - a systematic survey, even of a limited area of the vast corpus available, would surely unearth many unimagined patterns of usage and perception.

There are two distinct ways in which non-standard dialect may be used in English literature. One involves the use, deliberate or otherwise, of non-standard forms by the writer herself, acting in her own persona. The other involves the attributing to characters in the story the use of such forms (in dialogue). I discuss here one case of the latter type and one case which is in some respects intermediate.

Cases of the former type are interesting in face of the overwhelming monopoly enjoyed in respect of prestige by the various (closely similar) varieties of standard English, as far as serious writing is concerned. Any deliberate decision to use non-standard dialect features in this way normally involves a clear-cut perception to the effect that other factors - notably the creation of a specific literary atmosphere - outweigh the factor of prestige in the particular circumstances at hand. This is, of course, unusual; even in works by writers such as

*Please address correspondence to the Department of Linguistics, Monash University, Clayton, Victoria 3168, Australia.

Sillitoe (Saturday Night And Sunday Morning, etc) the local (Nottingham) non-standardisms are largely confined to dialogue, and where they do appear in the main narrative this is usually because Sillitoe has adopted the viewpoint and persona of his character. The phenomenon is perhaps more common in the work of non-native writers of English, although it is not by any means always clear how far these writers actually intend to produce non-standard forms (see below). More commonly, perhaps, writers are simply unaware that they are using non-standard forms. This is obviously possible in the cases of non-native writers in areas such as South-East Asia where no local endonormative standard exists, and where those who do not wish to use forms which they know to be local must as a result rely on their often imperfect grasp of a remote exonormative standard.

Use of non-standard forms (inadvertent or otherwise) is also possible when writers are attempting to use unusually informal registers, modelled on spoken styles. One excellent example of this kind of style is provided by John Salinger's The Catcher In The Rye (see Blake 1981:196). This work is presented as an informal narrative told by the teenaged "hero" Holden Caulfield, and the language is throughout Salinger's conception of early-1950s American teenage slang. How far the usage is intended to be non-standard as well as colloquial, especially in respect of grammar, remains unclear; but the characters are middle-class urban dwellers, and thus would not be expected to produce extremely divergent dialect features. In the modern English-speaking world, and in the U.S.A. in particular, these are now very largely confined to remote rural areas such as the Appalachians. However, certain non-standard constructions and forms which appear in the book are in fact highly divergent. In some cases these appear more characteristic of non-native varieties of English, and in others of middle-aged or elderly rural working-class speakers in places like the Appalachians, rather than of educated New York teenagers such as the fictional narrator. If Salinger is correct in suggesting that such such speakers do in fact use such forms (of this latter type, in particular), it may well be that established perceptions of the social and geographical distribution of some syntactic variants is seriously wrong, and, more specifically, that the degree of divergence from standard usage be to found in recent American speech may be much greater than previous academic studies have allowed for. This might, as a rider, have serious consequences for research methodology; but the inadequacies of older survey and elicitation methods are by now well-rehearsed, and the data themselves would be of even more interest. In fact, relatively little is known about contemporary

middle-class English usage.

The phenomena in question involve relative clauses and, more specifically, relative pronoun selection and morphology. Three obvious cases are as follows (page numbers in 1958 Penguin edition):

i) ... he started these undertaking parlours all over the country, that you could get members of your family buried for about five bucks apiece. (p 20)

ii) I know this guy down in Greenwich Village that we can borrow his car for a couple of weeks. (p 137)

iii) I know this guy that's grandfather's got a ranch in Colorado. (p 172)

Comments:

i) This usage is characteristic of a number of non-native varieties, notably that of Hong Kong (see Newbrook 1988:38). It perhaps originates, at least in cases such as these, in over-extension of the range of roles which relative that (or, in other examples, which) can play, to include cases where a preposition (here, at, etc) plus a relative pronoun, or relative where, would be required in the standard. On this phenomenon, see Newbrook fc.

ii) This usage is characteristic of recessive rural varieties of English, mainly in England. It arises, apparently, because of a preference for that and other semi-pronominal relatives (often, as) over the wh-relatives, and ensuing difficulties with inflexion, notably in respect of possessives. In this case the problem is solved by encoding the possessive morpheme as a separate item (his) - cf iii) below. In standard English the wh-form whose would be required. This usage is well exemplified for England by the examples cited by Darlington (1887), on South Cheshire (mostly with as rather than that). For more discussion see Newbrook fc.

iii) This usage represents another solution to the same problem as arises in ii). In this case the solution involves attaching the possessive marker -'s to that, which is of course impossible in standard English. This usage is found in various locations, but again mainly in rural England (and mainly recessively). The only report of recent use by educated urban speakers which has come to my

attention is a self-report by Anthea Fraser Gupta (born Tees-side during the post war years); but AFG would admit that she adheres exceptionally closely to local usage for a person of her age and education level. For more on this, see again Newbrook fc.

We must note, of course, that Salinger's perception might be seriously wrong in respect of at least some of these phenomena (compare the comments below on Clive James). However, the phenomena are not at all salient, and are certainly not involved in stereotyping of any kind (particularly in an urban American context). If Salinger is indeed misreporting (misremembering?) usage, it is not clear WHY this is happening. If, on the other hand, he is right, and these forms do indeed occur (perhaps frequently in the relevant varieties, this is of very great dialectological significance. Cases such as this are, then, obvious pointers to further research, both on the forms used by writers or attributed by them to their characters, and on the actual situations which are being mirrored in these works.

A completely different kind of phenomenon arises in Clive James' book Falling Towards England (reference is to the 1985 Picador edition). Here, the interest lies not in what usage may or may not occur - there seems to be no mystery here, nor any real need for further research on the dialectological facts - but on how a writer may in fact seriously misperceive and hence misrepresent features of a dialect with which he has only a limited acquaintance. In this case, the misperception seems to result from mediation through the system of the writer's own dialect. James' book is a humorous and no doubt partly fictional auto-biographical account of the author's life in London after his arrival from his native Sydney in the 1960s. At one point (p31), he is listening to two white South Africans conversing. The salient features of their strong South African accent are represented by means of imitated spelling. One exchange is as follows:

iv) Thet's what's rewning Efrica, litting a keffir talk to them like thet. -
Thet's right. They mist not be allowed to enswer beck.

Note that James has, resonably, used e to represent the very close realisation of /æ/ (even closer than in Australian English), as in thet (three times), Efrica, keffir and beck; ew to represent the typically South African diphthong in rewning (ruining); and - perhaps with some oversimplification but still plausibly - i for both /e/ (also very close) in litting and /ʌ/ in mist

(see Wells 1982:612ff). The problem arises in the case of enswer. If answer had /æ/ in South African English, this phoneme would indeed be realised around [ɛ], as in thet, etc - justifying this spelling. However, the word is in fact pronounced in South Africa with /ɑ:/, like the other members of the BATH word set as defined by Wells (1982:133ff; on South Africa see p 615). It is thus realised around [ɑ:] - [ɔ:] in broader South African accents (hence one might expect awnser or some such spelling).

James has made this mistake because answer and a number of other words in the BATH set do indeed display /æ/ in his own native accent, that of Sydney (contrary to the pattern found in some other Australian centres, where /ɑ:/is usual; see Wells 1982:599). He has, in other words, blended his essentially accurate perception of South African English phonetics with a phonological (incidence) feature of his own accent which South African English does not share. Cases such as this might suggest that it is harder to perceive and/or to analyse higher-level phonological features of accents other than one's own (even in theoretically more straightforward cases such as those of incidence) than purely realisational phenomena. While this would not be surprising, it is interesting that errors of this nature provide such clear-cut evidence of it.

This brief paper has done no more than indicate the interest which can be found in phenomena of this kind. The scope for further research on fronts such as these is obviously immense.

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